
ASUS P550 Level 3 4 Trouble shooting Guide



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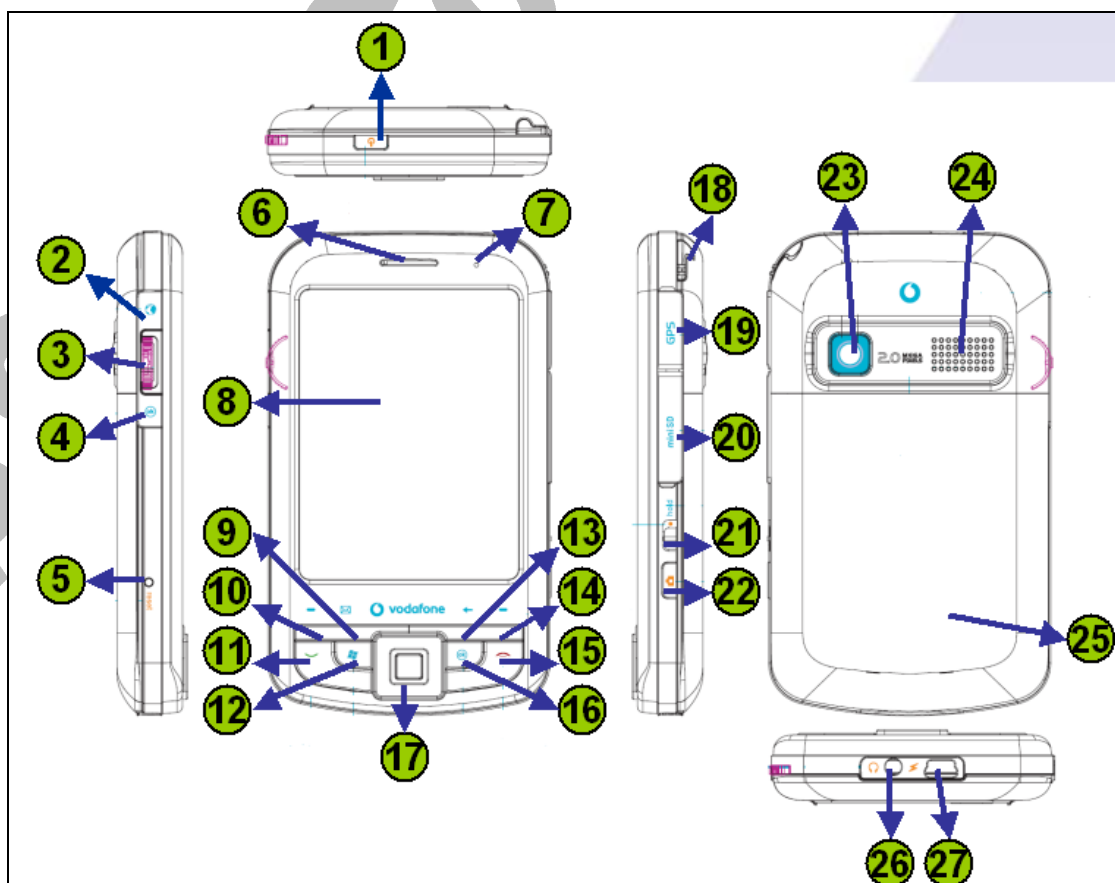
1. Feature Introduction

Solaris: WCDMA/GSM/GPS PDA Phone (Mars-series)

1.1 Specification

Operation system : Windows Mobile 6.0
CPU : Marvell PXA270 520MHz
Main Memory : 256MB Flash (M-System H3) + 64MB SDRAM (INFINEON HYB18L512320BF-7.5)
Modem : Intel PCPXA900 312MHz
Modem Memory : 32MB Stacking Flash + 16Mb PSRAM (Micron MT45W1M16PDGA)
LCD : 3.5 inch, QVGA, Transflective, Touch-panel (TPO TD035STED8)
Camera : 2M pixel, Fixed Focus (Walton COB20MZ1-solaris)
WiFi : IEEE 802.11b/g (ALPS UGGZ3X10BA)
Bluetooth : Bluetooth V2.0 (CSR BC41B143A05-IXB-E4)
GPS : SiRF StarIII GSC3F/LP-7979
Extended memory : Mini-SD Socket
Battery : 1530mAh (Welldone SBP-14)

ID Overview

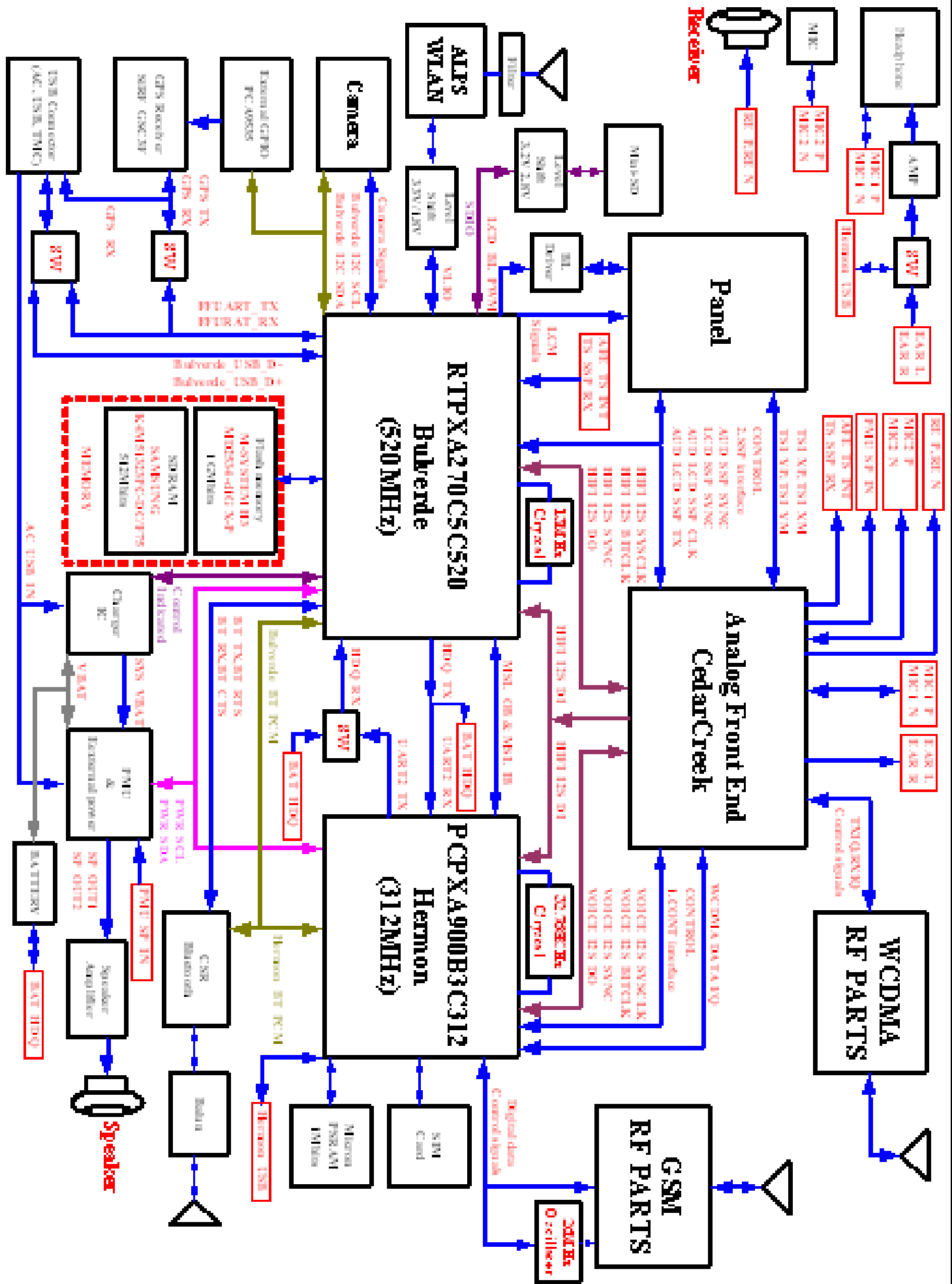


Main key function Description

- 1.Power Key
- 2.Explorer Key
- 3.3-way Navigation-Key
- 4.OK Key
- 5.Reset Key
- 6.Receiver
- 7.Notification LED
- 8.LCD (Touch)
- 9.Message center
- 10.Function Key1
- 11.Send Key
- 12.Start Key
- 13.Back Key
- 14.Function Key2
- 15.End Key
- 16.OK Key
- 17.5-way Navi-Key
- 18.Stylus
- 19.Active GPS antenna socket
- 20.Mini-SD socket
- 21.Hold Key
- 22.Camera Key
- 23.Camera
- 24.Speaker
- 25.Battery Cover
- 26.Phone Jack
- 27.Mini USB socket



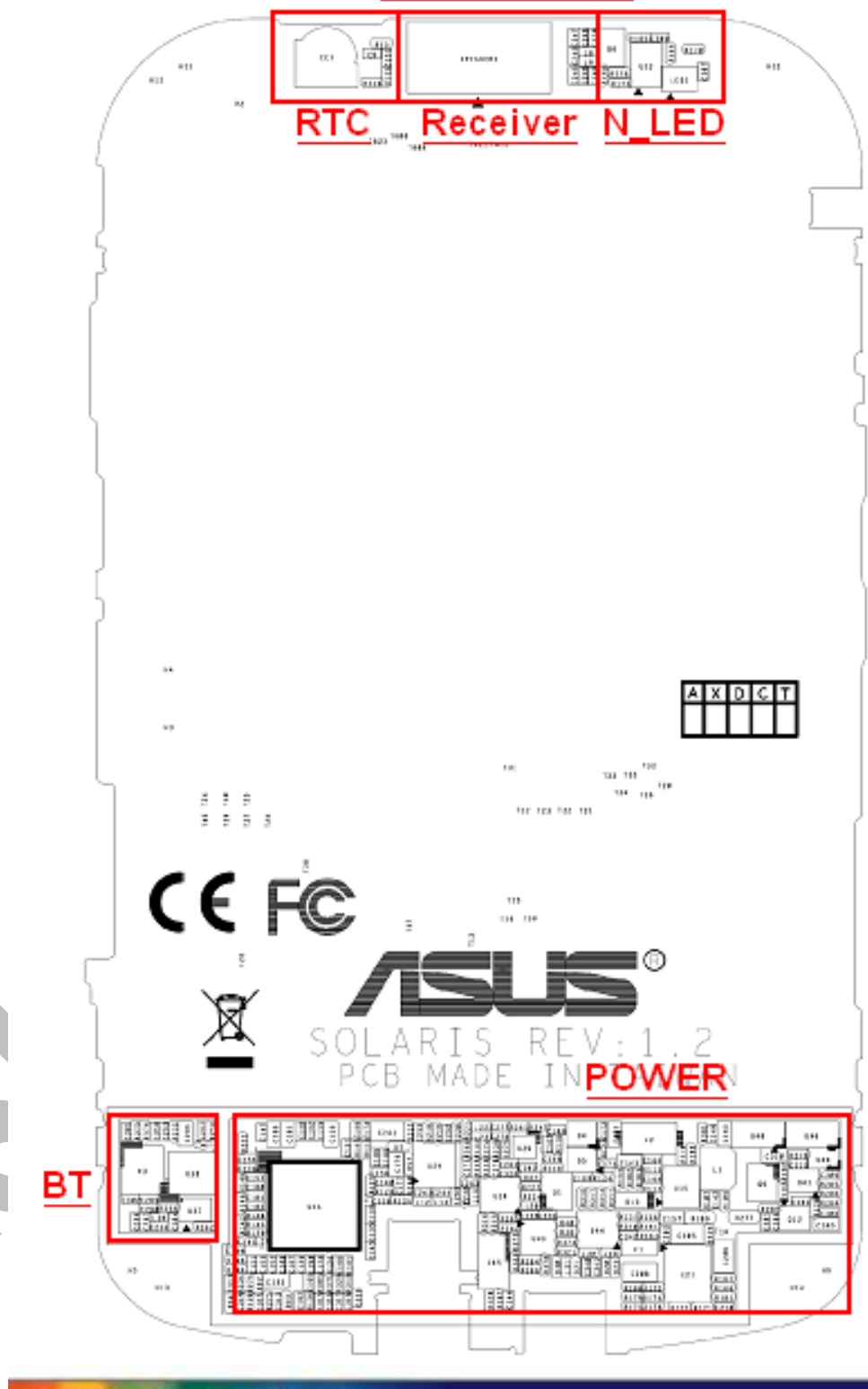
2. Block Diagram



3. BASE Band Placement

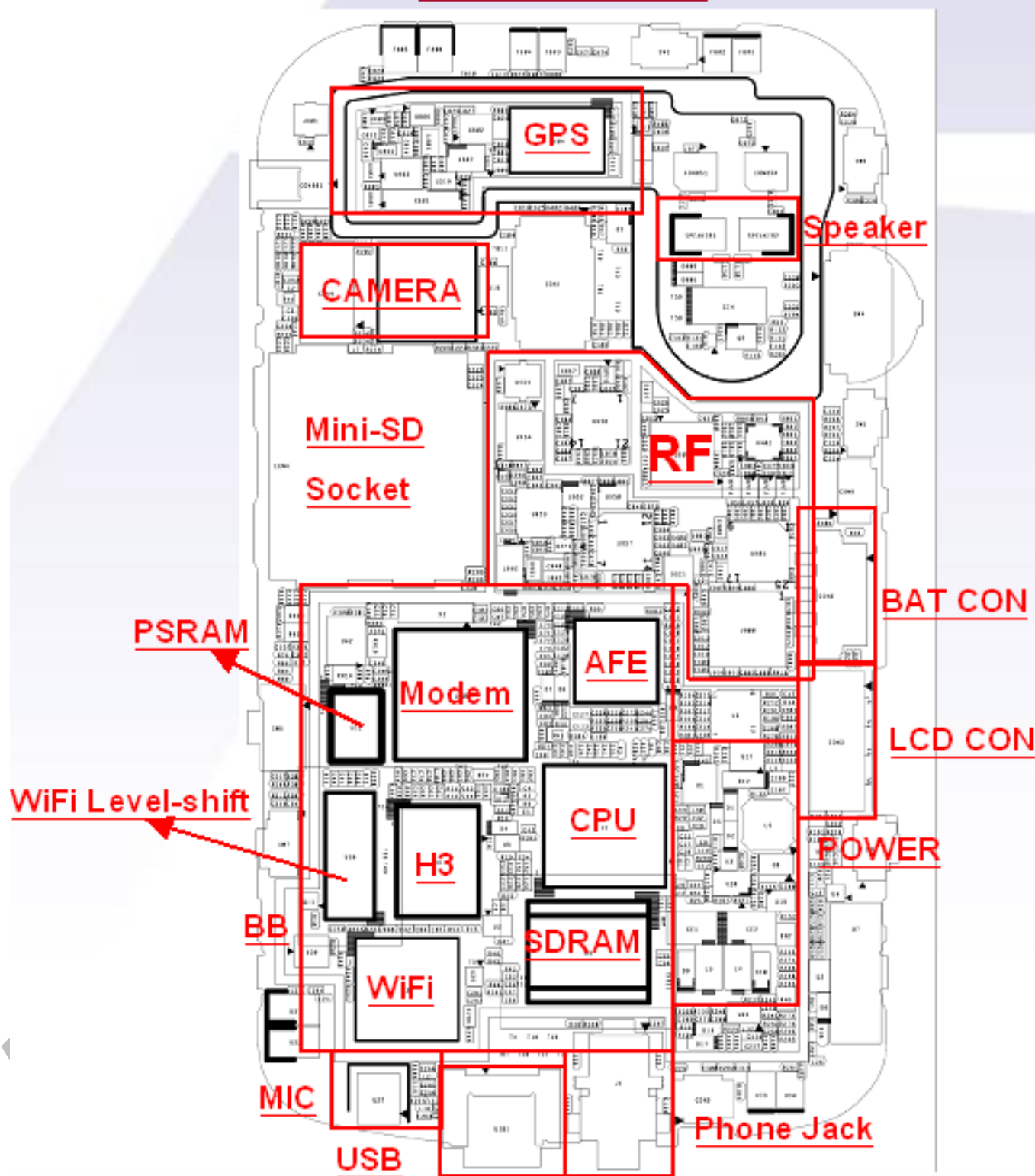
3.1 Solaris TOP View

TOP Side



3.2 Solaris Bottom View

Bottom Side



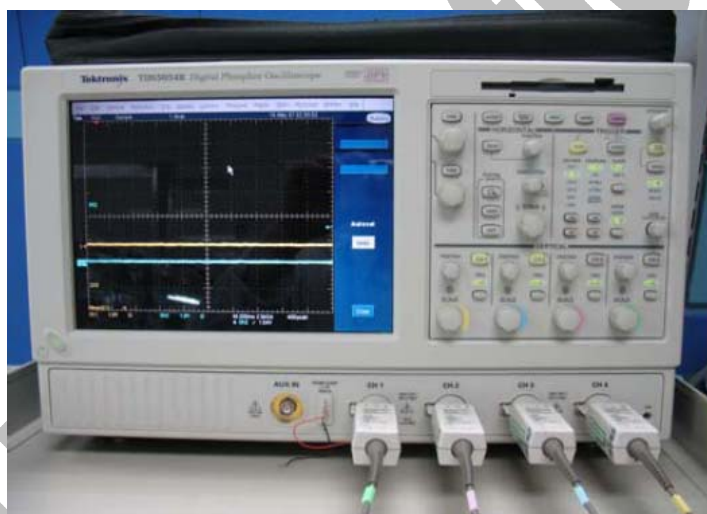
4. Base Band Repair Tooling

4.1 HW

Power source: power supply (Monitor current)



Digital Phosphor Oscilloscope



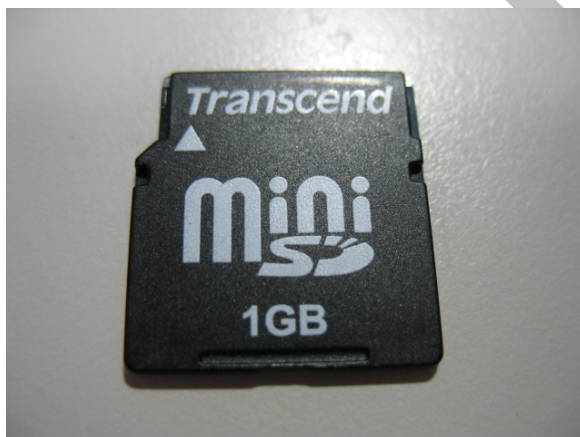
Digital Meter



Adapter: JSP050090UU



Mini SD with test-program



ME tool

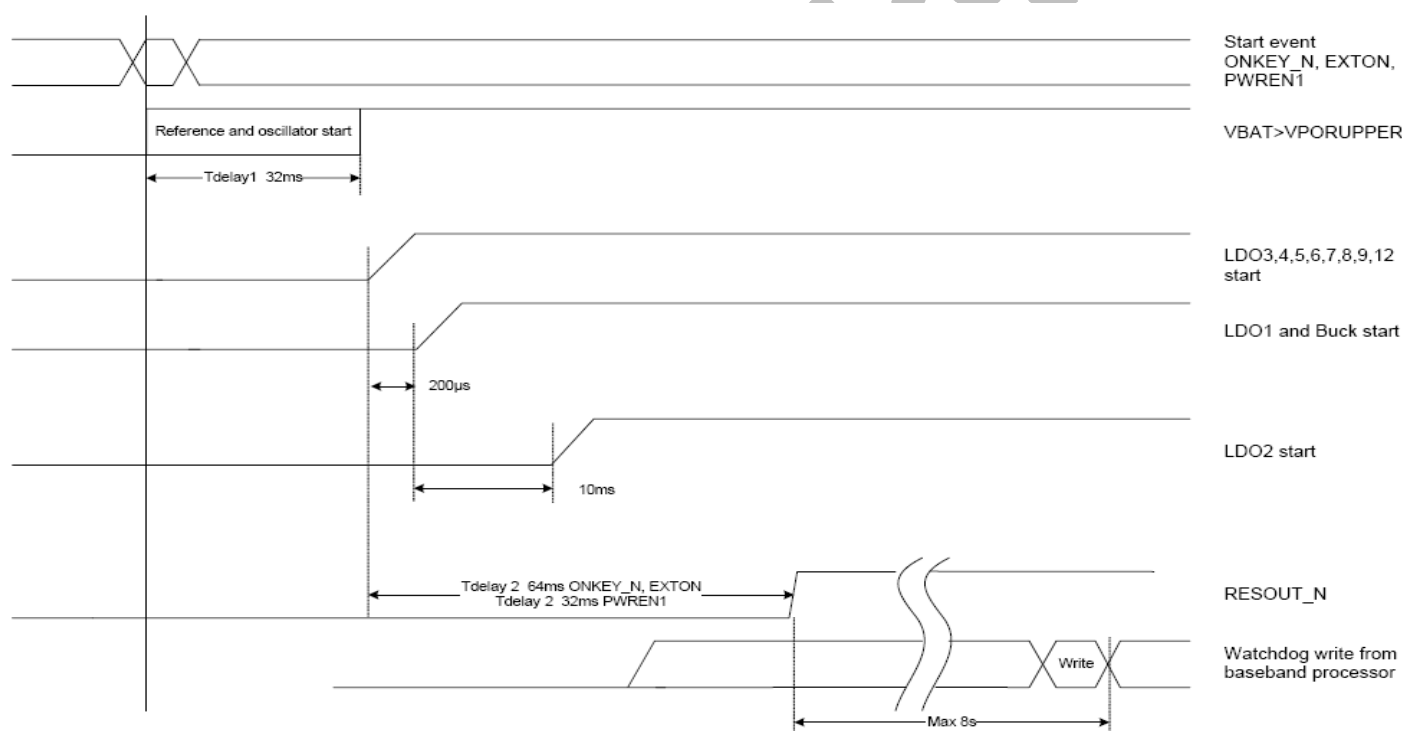


5. Chip Timing Sequence

5.1 PMU Timing Sequence

Base band start-up sequence:

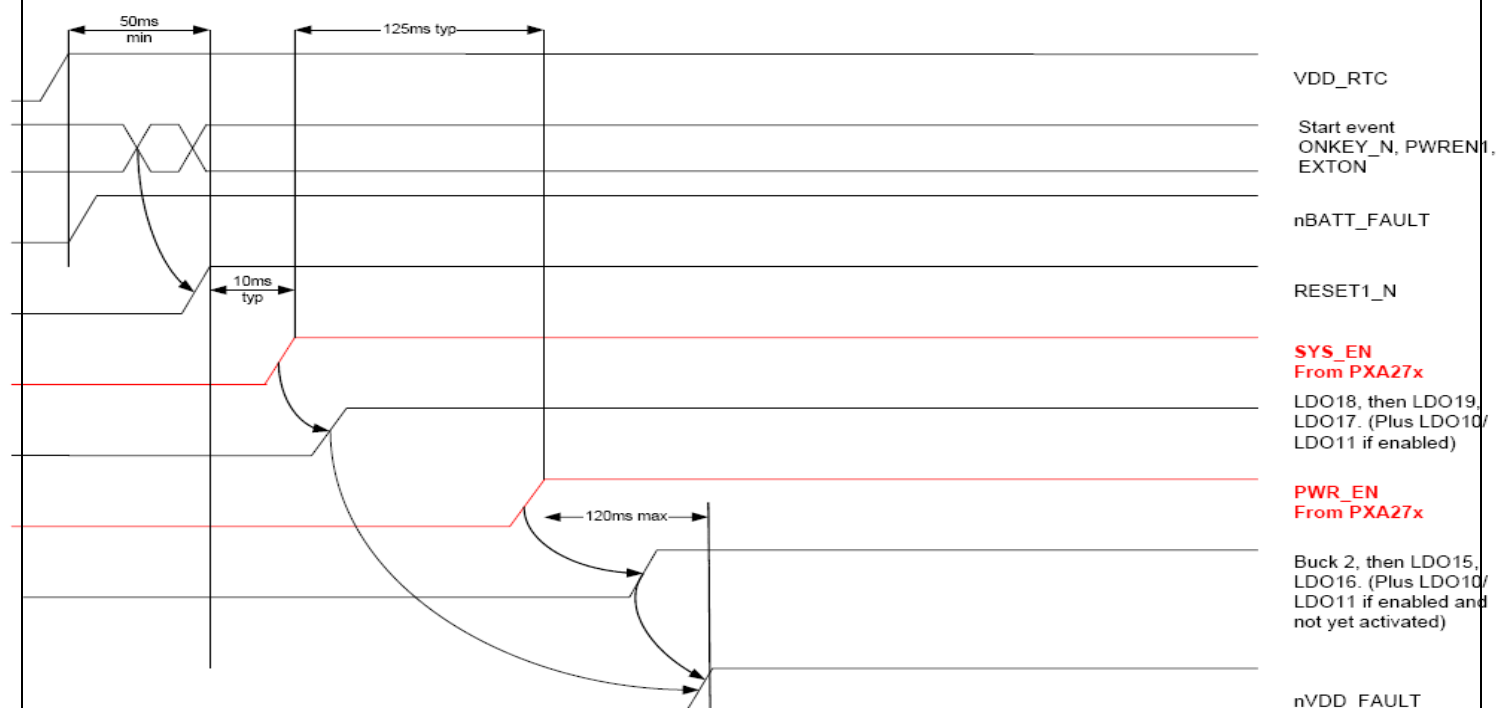
1. The DA9030 powers up the following LDO for the Baseband: LDO3, LDO4, LDO5, LDO 6, LDO8, LDO7, LDO9, LDO12, LDO14 (I/O LDOs, RF I LDOs and VCTXO LDO).
2. After delay of 200 μ s from end of stage 1 the DA9030 powers up LDO1 and DC/DC1 (Base band core and PLL).
3. After delay of 10ms from end of stage 2 the DA9030 will power up LDO2 (internal Flash LDO).
4. After delay of Tdelay2 (32ms) from the start of the start-up sequences (stage 1) the DA9030 will raise RESOUT_N signal to the base-band chip.



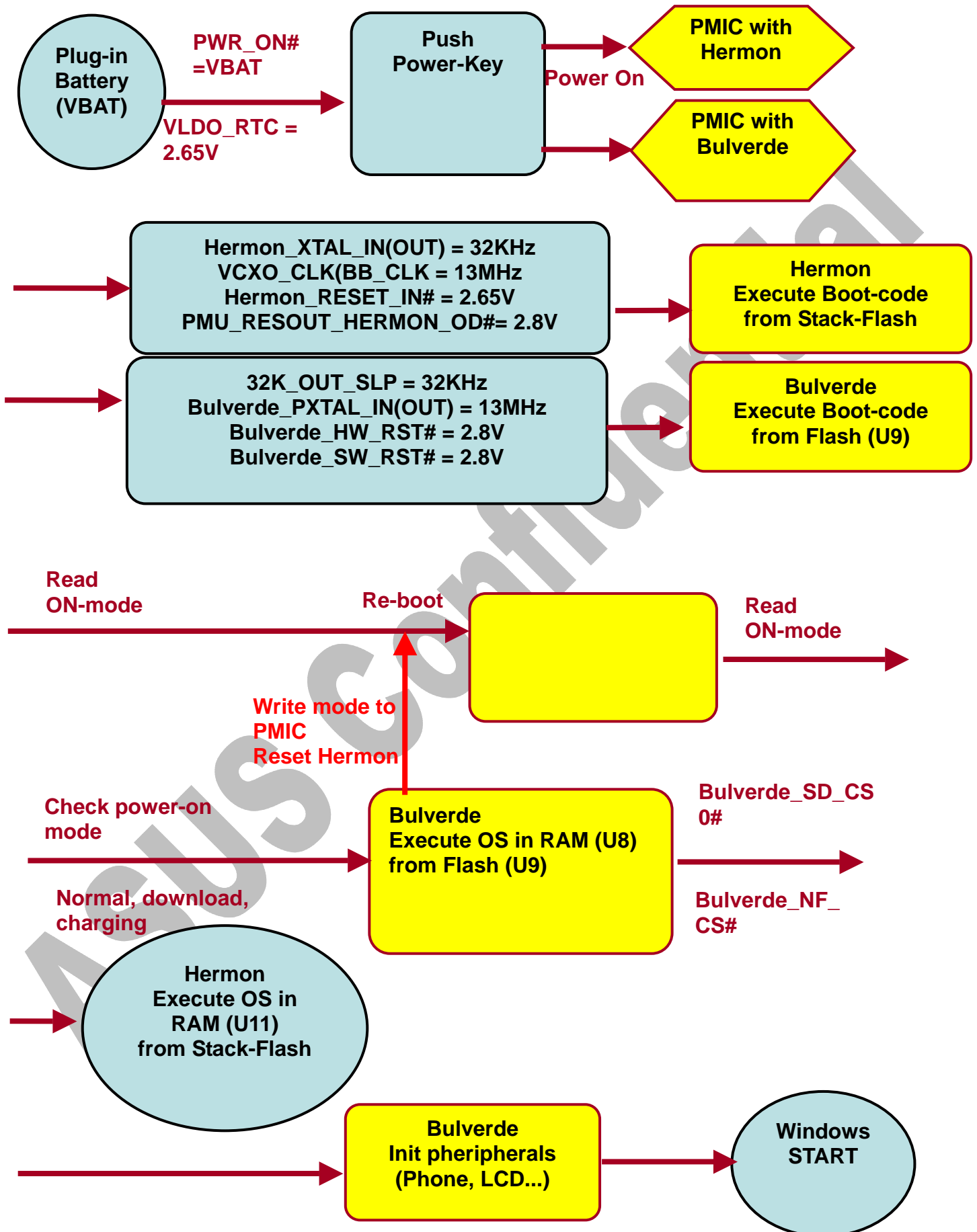
5.2 CPU Timing sequence

PXA27x Start-up sequence:

1. Once the VBAT has risen above the VBATUNDER threshold, the DA9030 de-asserts (High) BATT_FAULT signal to the PXA27x chip (indicating that VBAT is ok).
2. On receiving a start event the DA9030 de-asserts RESOUT1_N (high) (a minimum 50ms from power up of the RTC LDO is required to reset the PMU unit in the PXA27x and before RESOUT1_N can be de-asserted).
3. The DA9030 waits for the PXA27x to assert (High) SYS_EN and powers up the LDOs associated with this signal (described below).
4. The DA9030 waits for the PXA27x to assert PWR_EN (typically 125ms after asserting SYS_EN) and powers up the sources associated with this signal (described below).
5. After all sources are stable for the PXA27x, the DA9030 will de-assert (High) VCC_FAULT (so the PXA27x can continue with its power up sequence).

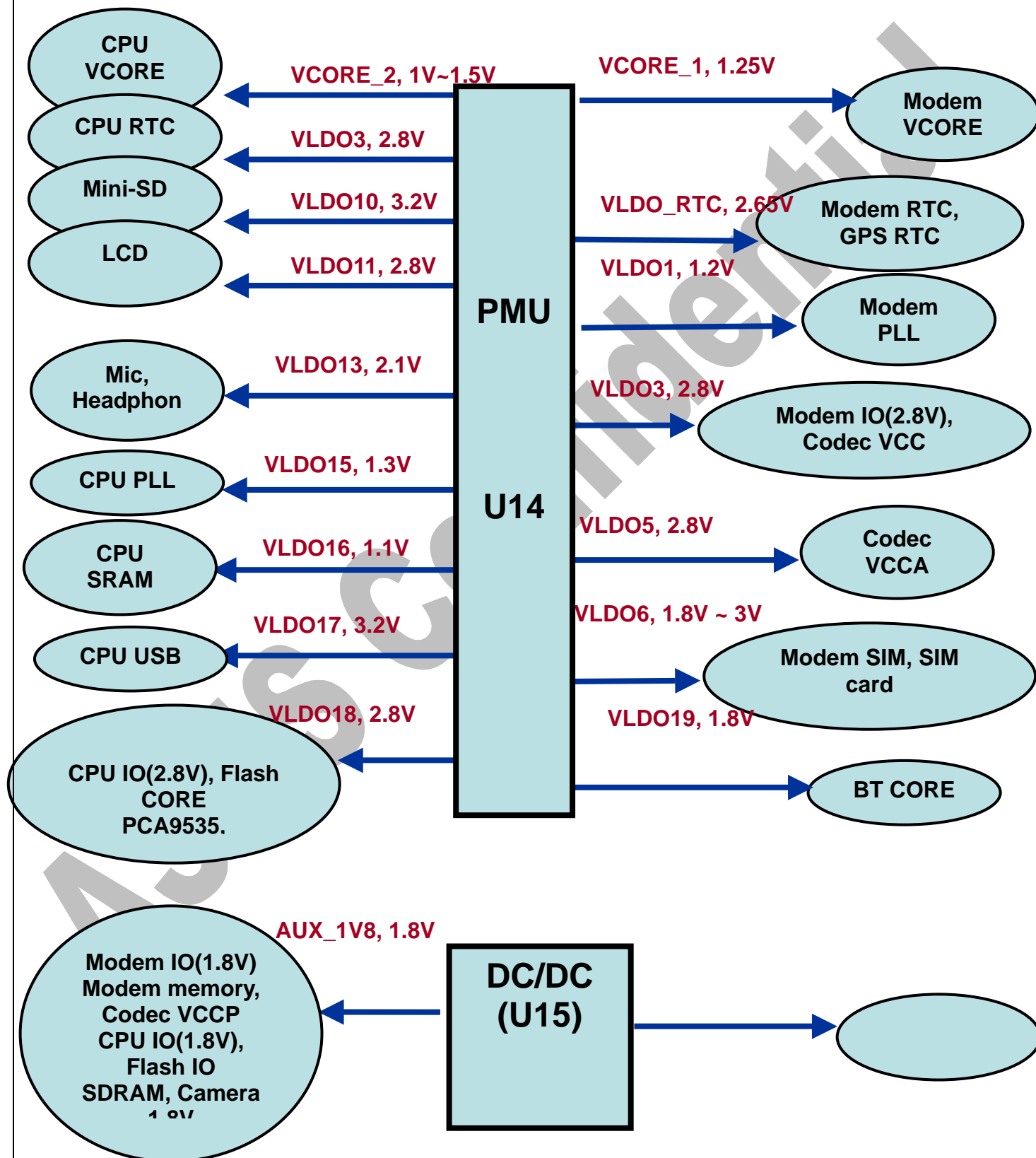


5.3 System Flowchart



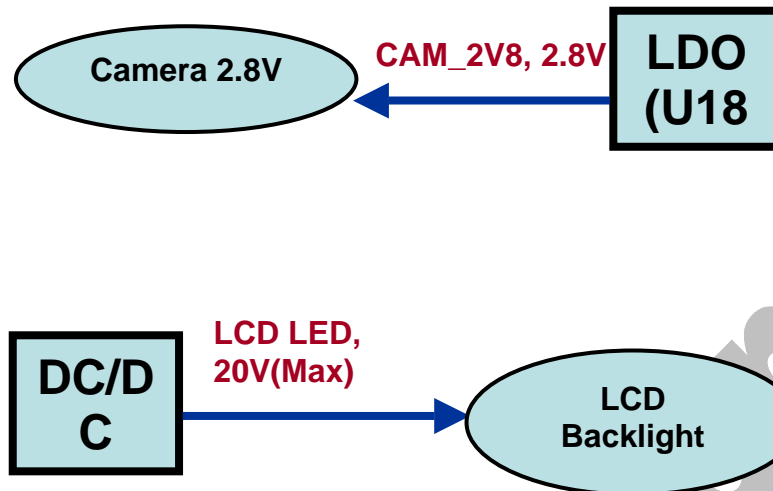
5.4 Power supply Block

➤ Power system ~ Supplied

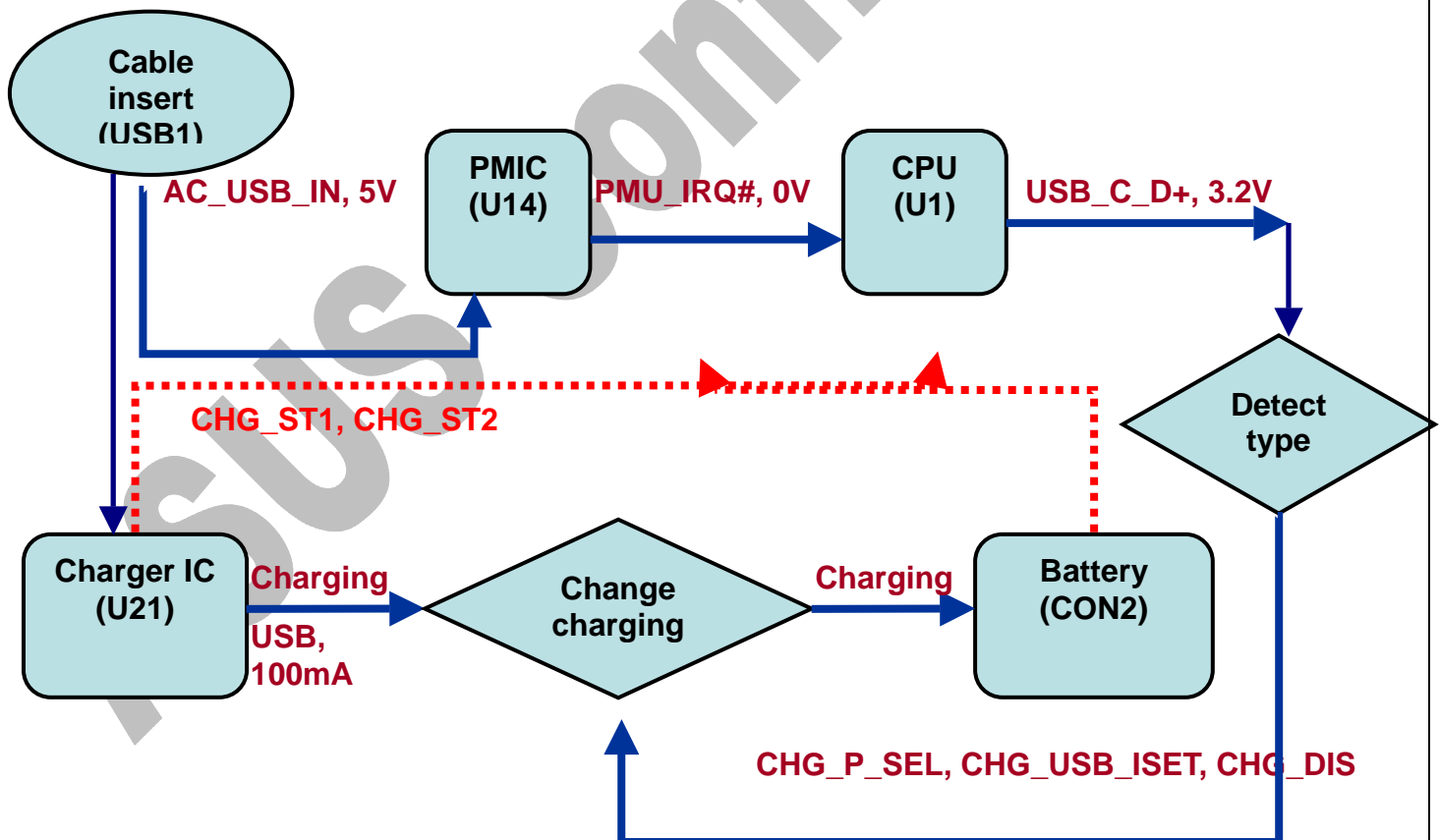


5.5 Power system Supplied Block

➤ Power system ~ Supplied



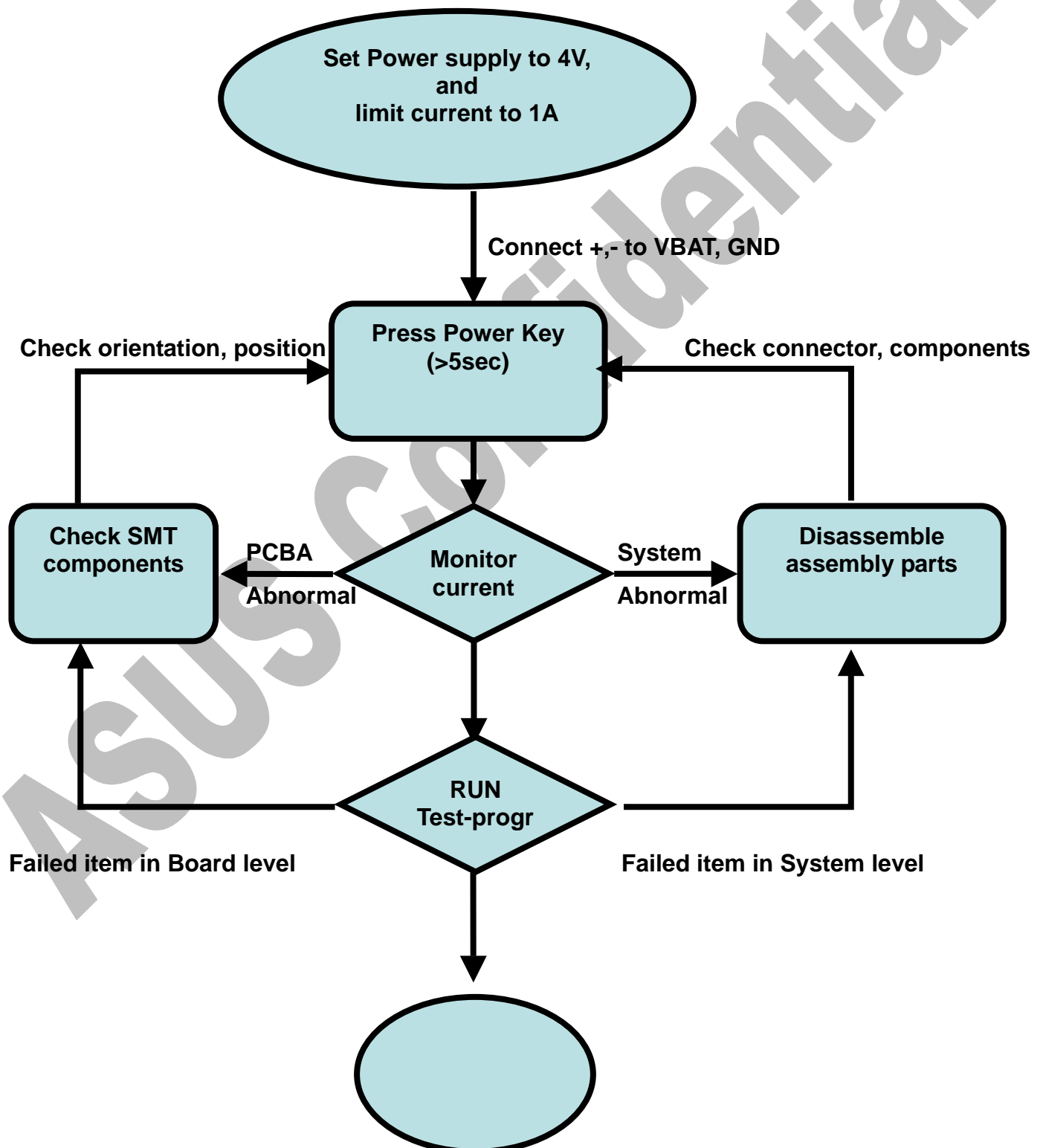
5.6 Power System Charging block



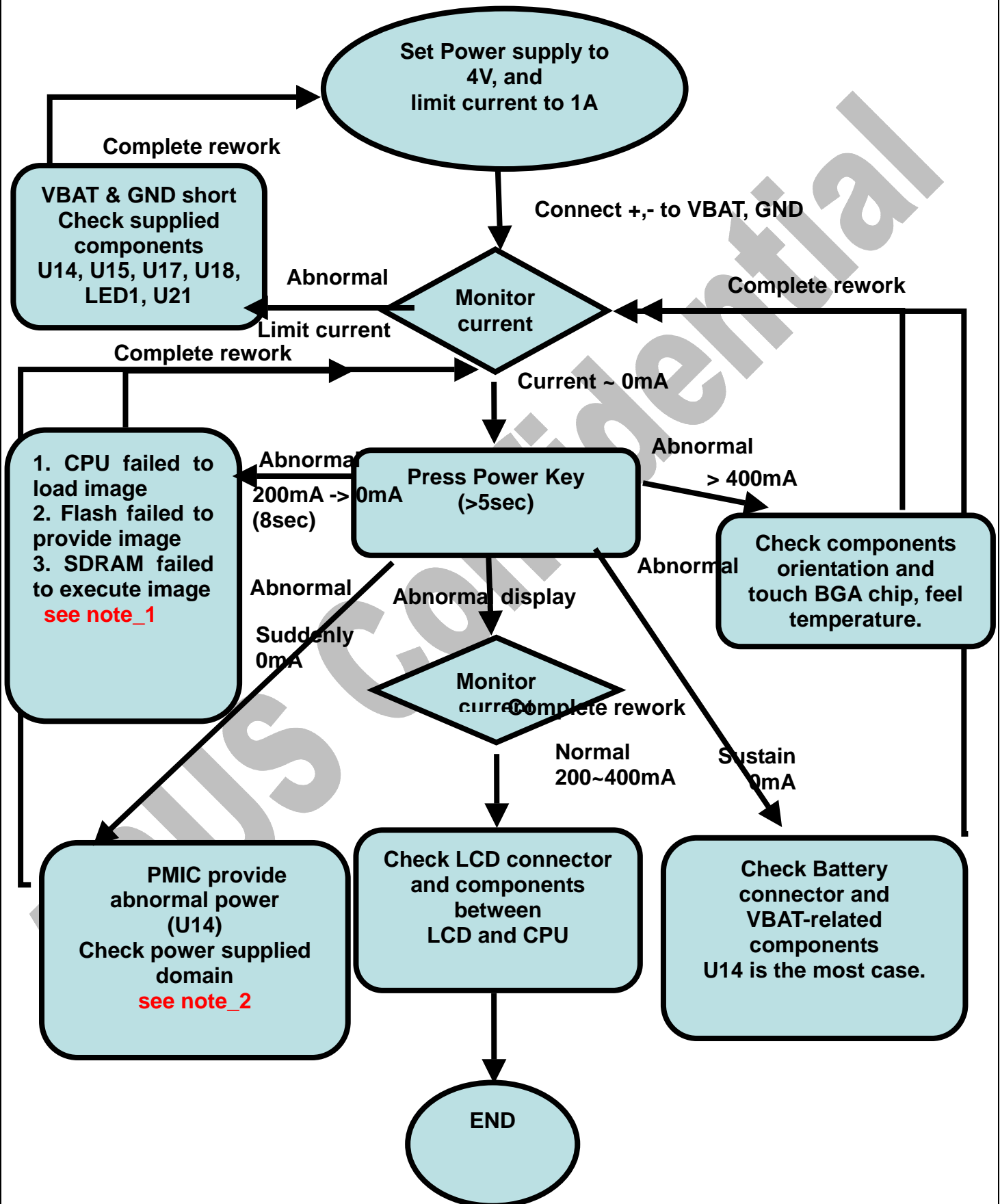
6. Trouble shooting

6.1 General Process

➤ Trouble shooting ~ Procedure



6.2 Can't Power ON process



Note 1

Measure reset signal (Bulverde_HW_RST#, Bulverde_SW_RST#), High => Inspect related components.

2. Measure clock signal (Bulverde_PXTAL_IN, Bulverde_PXTAL_OUT), 13MHz. (Bulverde_32K_IN), 32KHz.
Inspect U1, X1. And U10.

3. Measure chip-select signal (Bulverde_NF_CS#), H-L... (Bulverde_SD_CS0#), H-L... => Inspect U1

4. Measure data-signal (D0), H-L... => Inspect U8, U95. Un-mount Flash(U9) and re-download image. And then re-mount.

Note 2

1. Don't supply VBAT to PCB, and measure impedance of all power supplier (VCORE_1, VCORE_2.....)

Note3

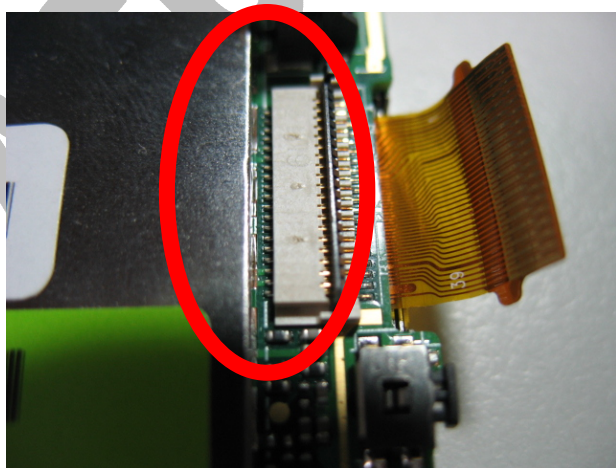
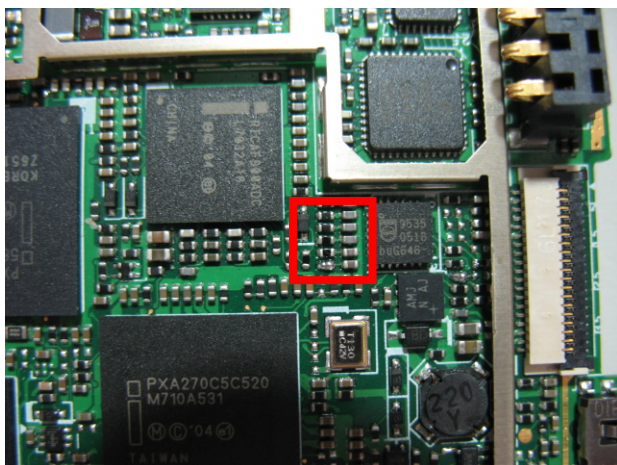
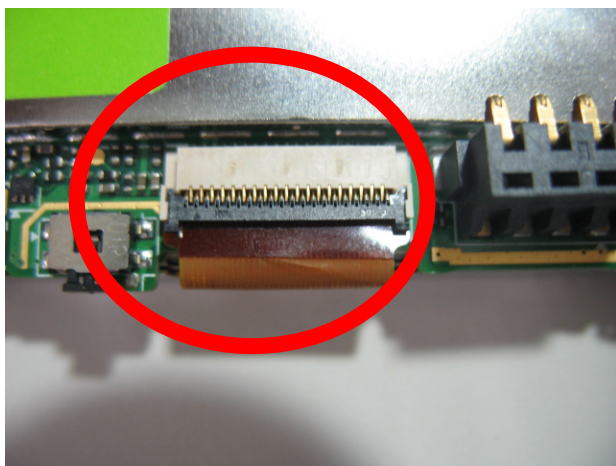
Re-download image

2. If re-download image remain failed, please un-mount Hermon (U10) and re-download by DATA-IO.

7. Trouble shooting

7.1 Touch panel failed

1. Check LCD connector (CON3) => Assembly, Soldering issue
2. Replace LCD to golden sample => Component issue
3. Check communicated components between LCD (CON3) and Codec (U13)
=> Soldering issue



7.2 SDRAM

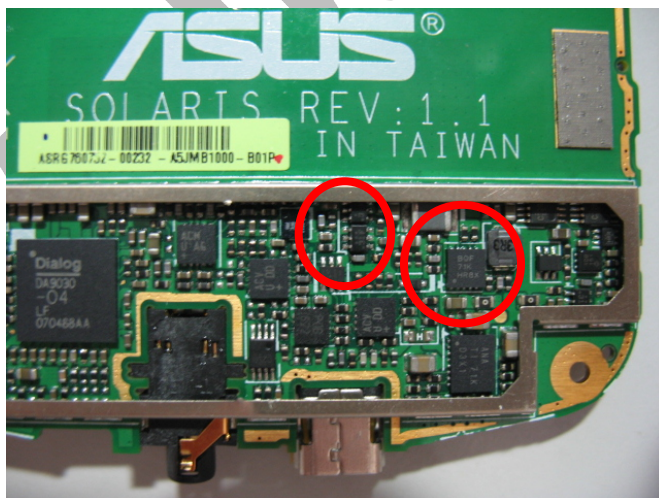
1. Check SDRAM (U8) and peripherals => Soldering issue
2. Measure power supplied, AUX_1V8_2 (R43) => Power supplied issue, check U15, Q5 peripherals
3. Measure clock signal, Bulverde_SDCLK1 (R1) => Check U1 and peripherals
4. Measure chip-select signal, Bulverde_SD_CS0# (T51) => Check U1 and peripherals

Note: If normal display and hang-up,
Modem failed to load image.

see note_3

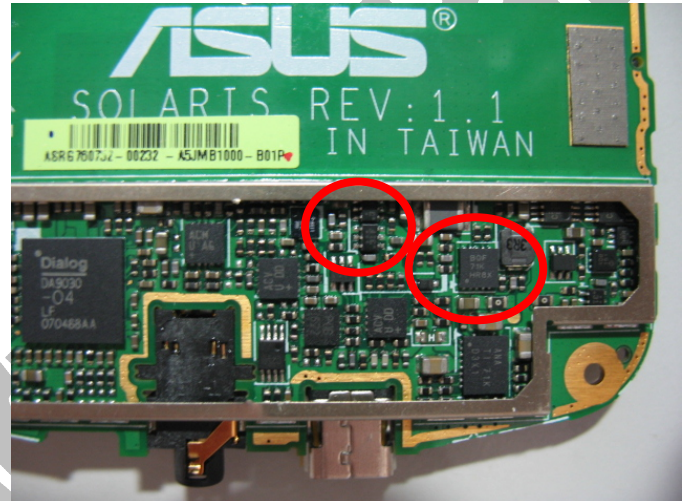
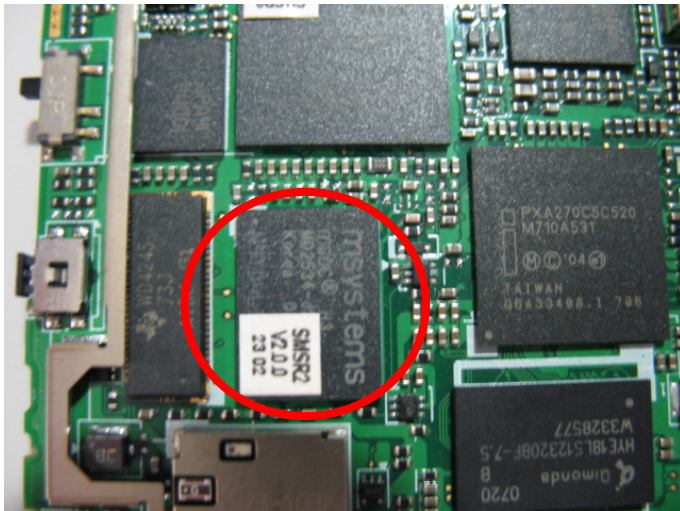
END

BAT_HDQ



7.3 Flash failed

1. Check Flash (U9) and peripherals => Soldering issue
2. Measure power supplied, AUX_1V8_2 (R43), VLDO18 (R49) => Power supplied issue, check U15, Q5 peripherals
3. Measure chip-select signal, Bulverde_NF_CS# (T49) => Check U1 and peripherals
4. Measure chip-select signal, M-SYSTEM_BUSY# (R47) => Components issue, replace U9



7.4 SDCARD

1. Check mini-SD socket (CON6) => Soldering issue
2. Check communicated components between mini-SD (CON6) and CPU (U1), U42 and peripherals => Soldering
3. Measure power supplied, VLDO10 (R290) => Power supplied issue, Check PMIC (U14)
4. Measure clock signal, SDMMC_CLK (R5) => Check U1 and peripherals
1. Check SDRAM (U8) and peripherals => Soldering issue
2. Measure power supplied, AUX_1V8_2 (R43) => Power supplied issue, check U15, Q5 peripherals
3. Measure clock signal, Bulverde_SDCLK1 (R1) => Check U1 and peripherals
4. Measure chip-select signal, Bulverde_SD_CS0# (T51) => Check U1 and peripherals

Note: If normal display and hang-up,
Modem failed to load image.

see note_3

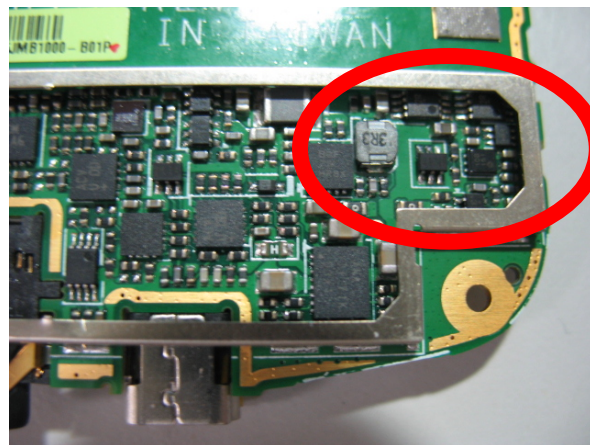
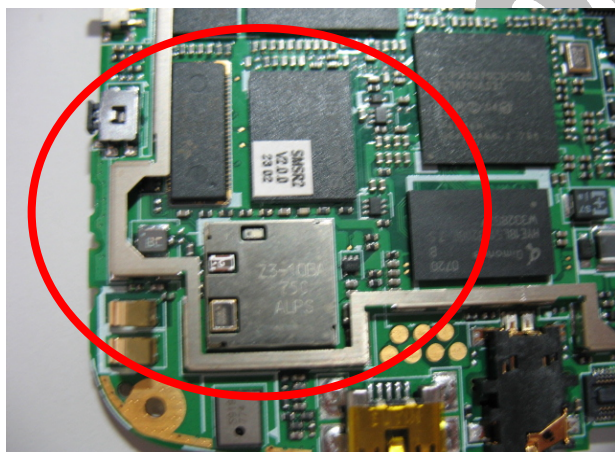
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BAT_HDQ



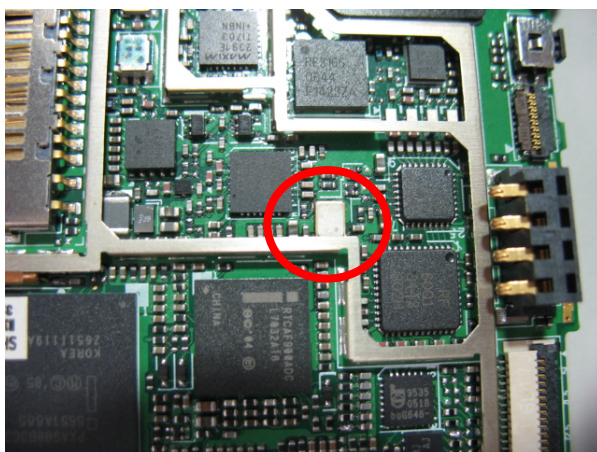
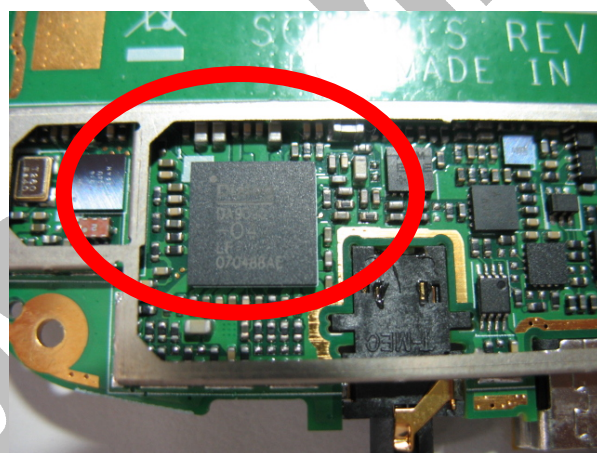
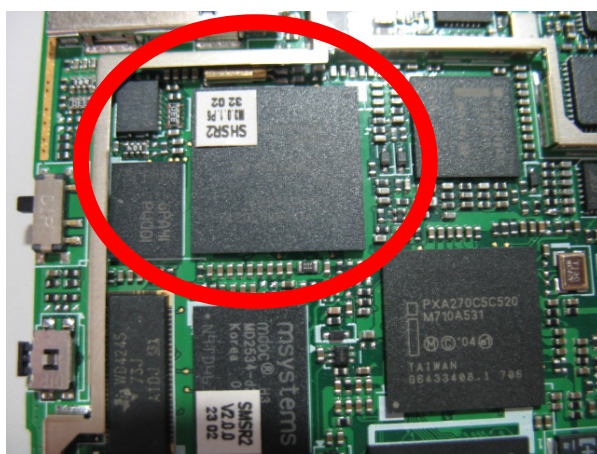
7.5 WiFi failed

1. If performance failed, check assembly WiFi antenna, Spring (U31,U32) contact => Assembly, Soldering issue
2. Check WiFi (U35), Level-shift (U36) and peripherals => Soldering issue
3. Measure power supplied, WLAN_3V3 (R277), WLAN_1V5 (R278) => Q12, U41 and peripherals, soldering issue
4. Measure chip-select, Bulverde_WLAN_CS# (R255) => Components issue, U35, U36, U1 and peripherals



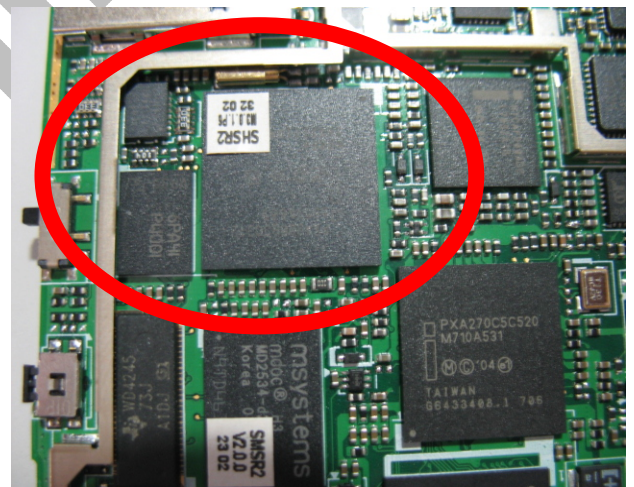
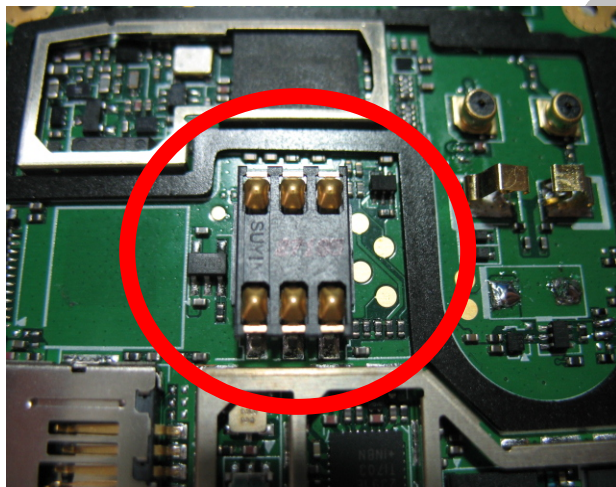
7.6 Modem-BUS failed

1. Check Modem (U10), PSRAM (U11) and peripherals => Soldering issue
2. Clean-boot or Re-download image => Image crash
3. Measure power supplied, VCORE_1 (R79) and etc. => Check PMIC (U14) and peripherals
4. Measure clock signal, VCXO_CLK (OSC1), 13MHz. X'TAL (X2), 32KHz. => Check PMIC (U14) and peripherals



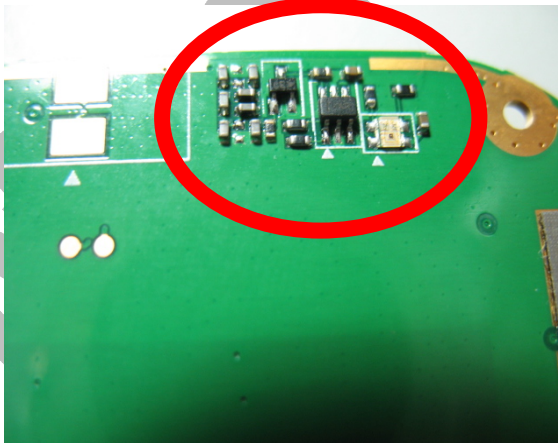
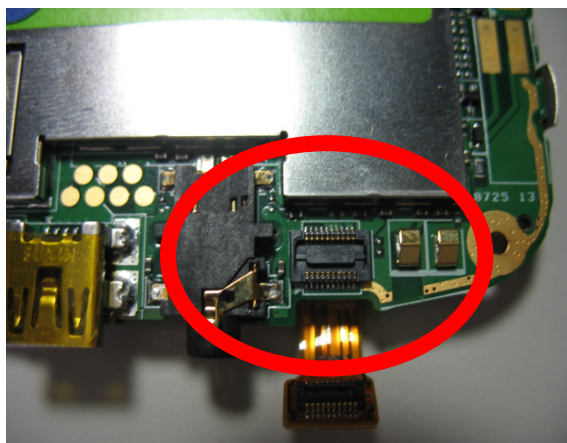
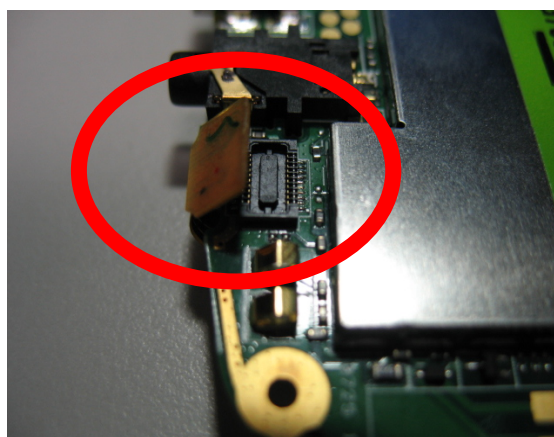
7.7 SIM failed

1. Check Wireless-manager, Phone must be ON => Operation issue
2. Check antenna cover => Assembly issue
3. Check SIM socket (CON1) and peripherals => Soldering issue
4. Check Modem (U10) and peripherals => Soldering issue



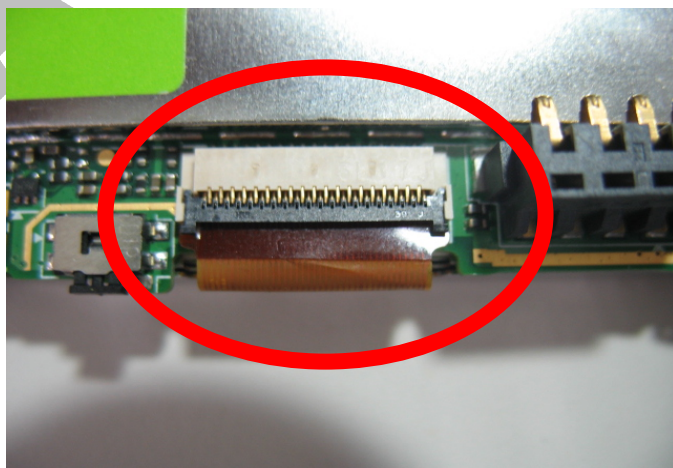
7.8 LED

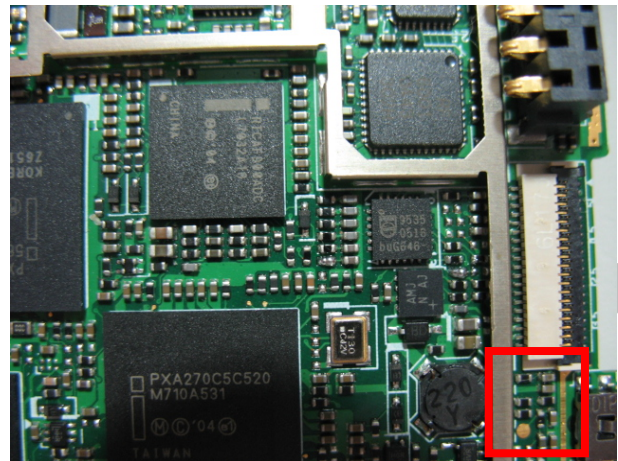
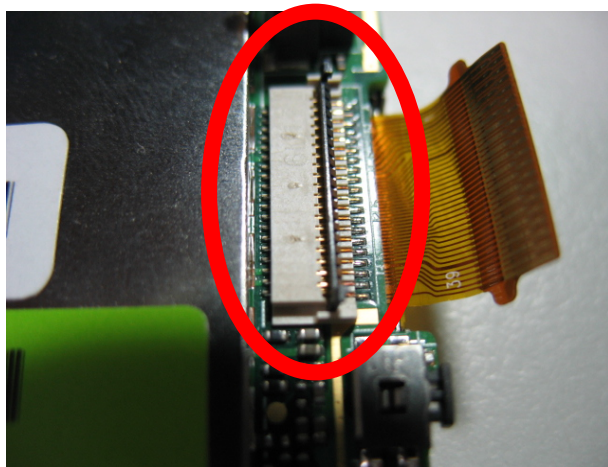
- 1-1. If Keypad LED failed, please check Keypad FPC assembly => Assembly issue
- 1-2. If assembly is fine, please check connector (CON5) and peripherals => Soldering issue
- 2-1. If notification LED (LED1) failed, check LED1 and peripherals => Soldering issue



7.9 Display failed

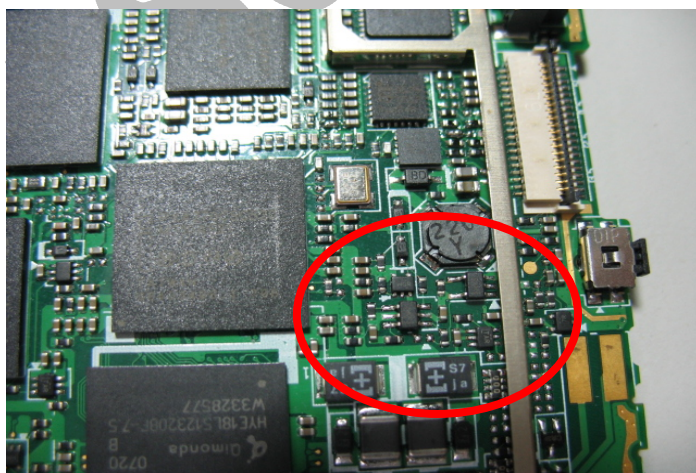
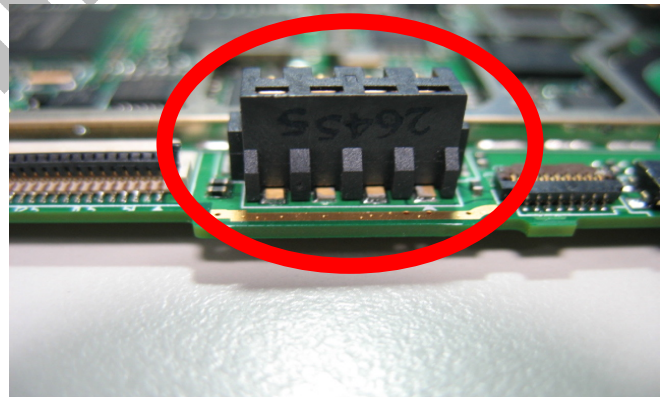
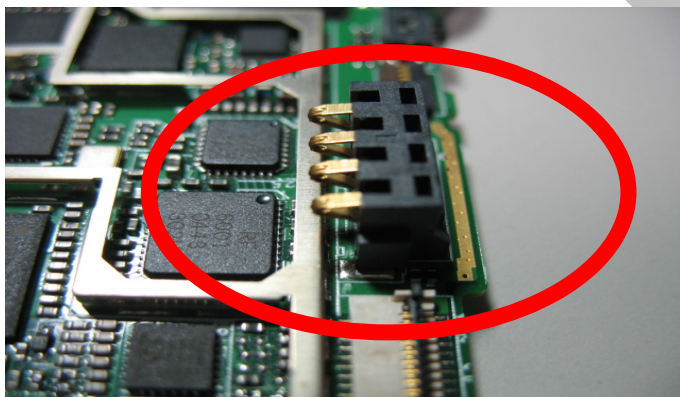
1. Check LCD connector (CON3) => Assembly, Soldering issue
2. Replace LCD to golden sample => Component issue
3. Check power supplied (R216), reset# (R198), SD (R270) => Soldering issue
4. Check communicated components between LCD (CON3) and CPU (U1) => Soldering issue





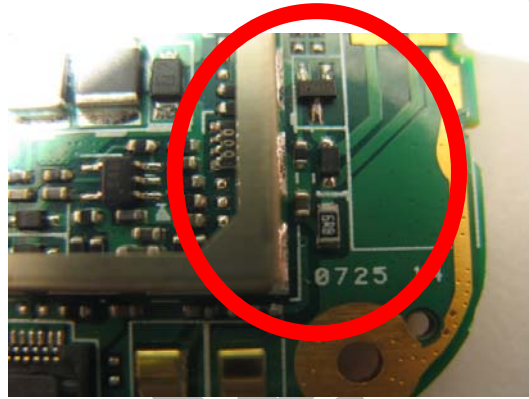
7.10 Battery failed

1. Double check Battery on fine device => Component issue
2. Check Battery connect (CON2) => Soldering issue
3. Check signal, BAT HDQ(CON2, pin4), Q8, U20 => Soldering issue



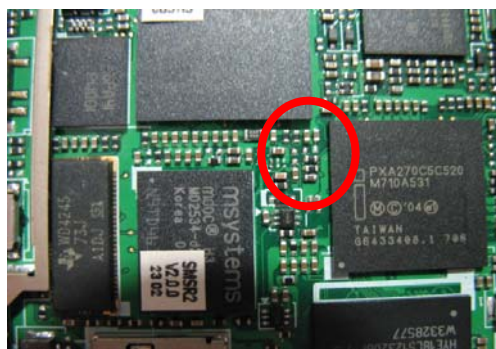
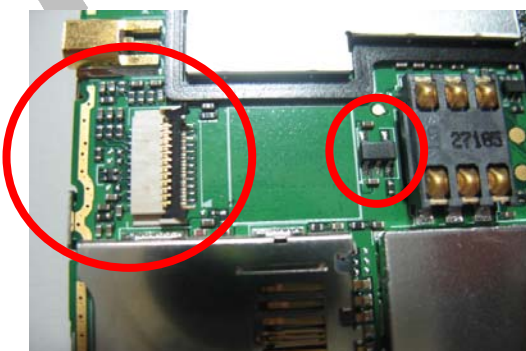
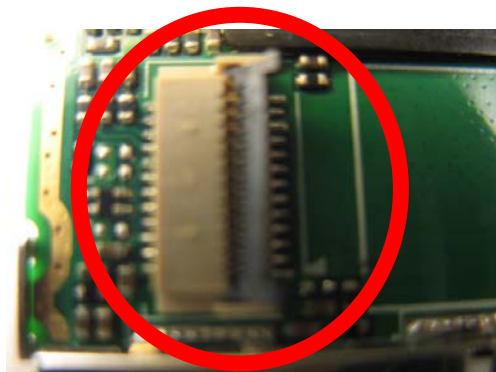
7.11 Vibrator failed

1. Check Vibrator => Assembly issue
2. Replace Vibrator to golden sample => Component issue
3. Check power supplied (R36), Driving signal (Q2) => Soldering issue



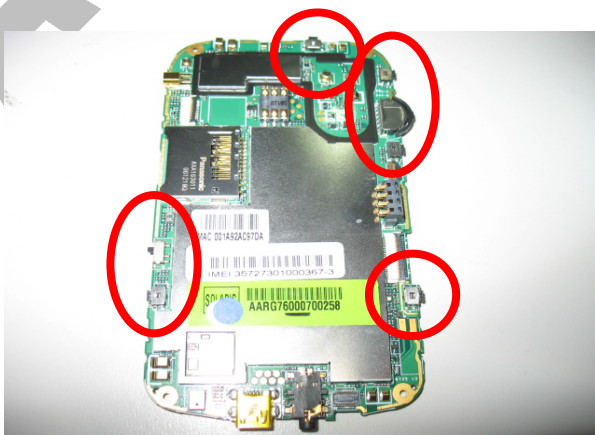
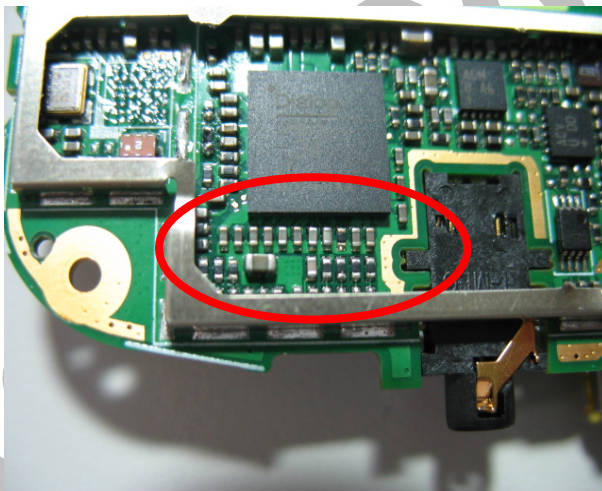
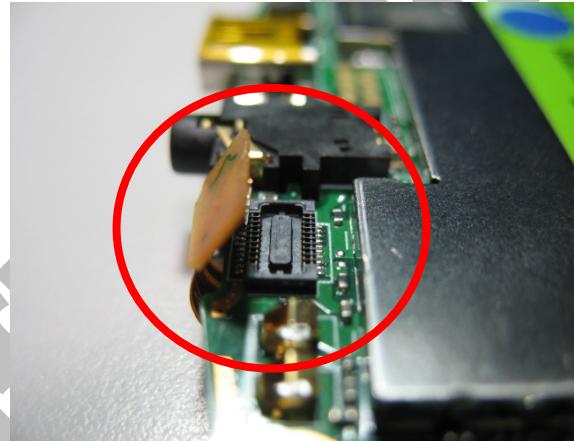
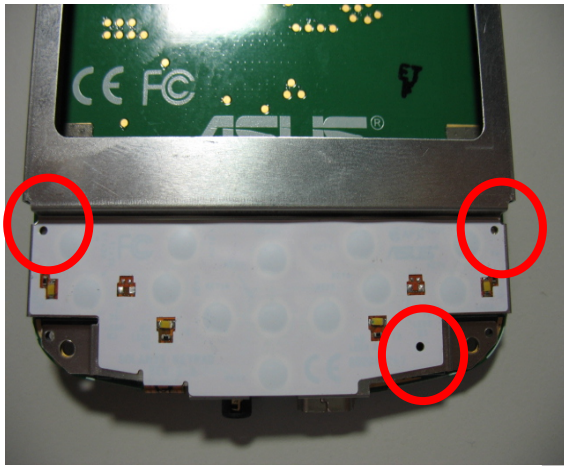
7.12 Camera

1. Check Assembly => Assembly issue
2. Replace Camera module to golden sample => Component issue
3. Check Camera connector => Soldering issue
4. Check power supplied (U18), CAM_RESET# (R187), CAM_STBY (R185), Bulverde_I2C (RN1), CAM_MCLK (R8) 26MHz => Soldering issue
5. Check signal from Camera, CAM_XXX => Component issue



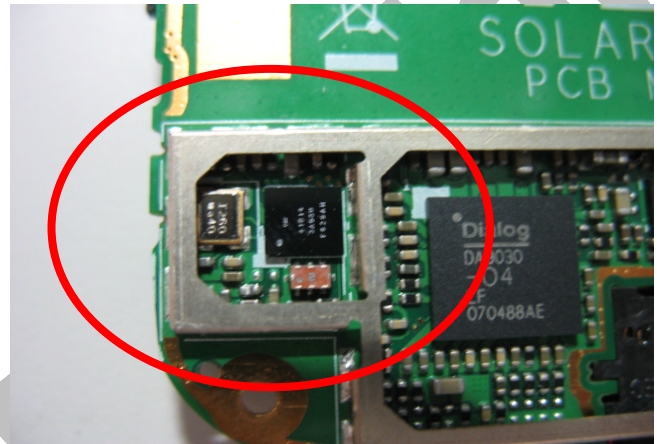
7.13 Button failed

1. Check stick position of keypad board => Assembly issue
2. Check assembly between keypad and connector (CON5) => Assembly issue
3. Replace to golden sample => Component issue
4. Check signal KP_XXX => Soldering issue
5. Check assembly of side-Key => Assembly issue
6. Check SMT switch (SW1 ~ SW7) => Soldering issue



7.14 BT failed

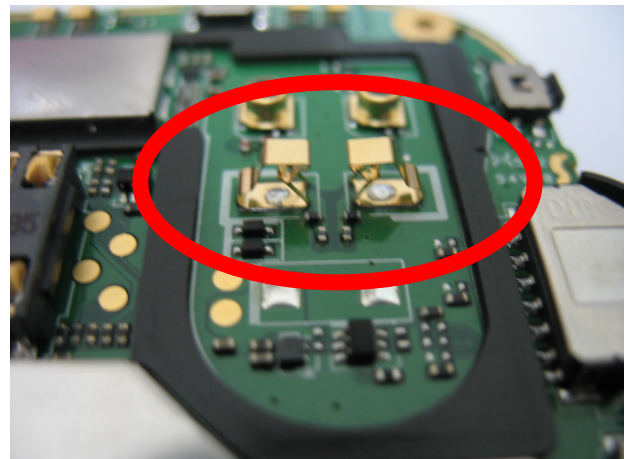
1. If performance failed, check assembly BT antenna, Spring (U33,U34) contact => Assembly, Soldering issue
2. Check BT (U38), Filter (U37) and peripherals => Soldering issue
3. Measure power supplied (R251, R252), BT_RESET# (R280), X'TAL (X3) => Soldering issue

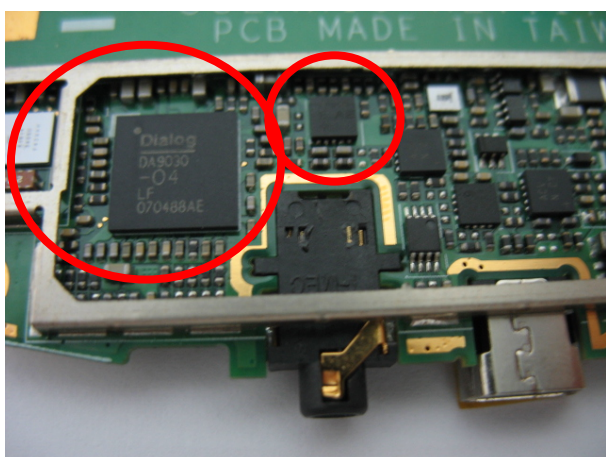


7.15 Audio failed

Speaker no sound

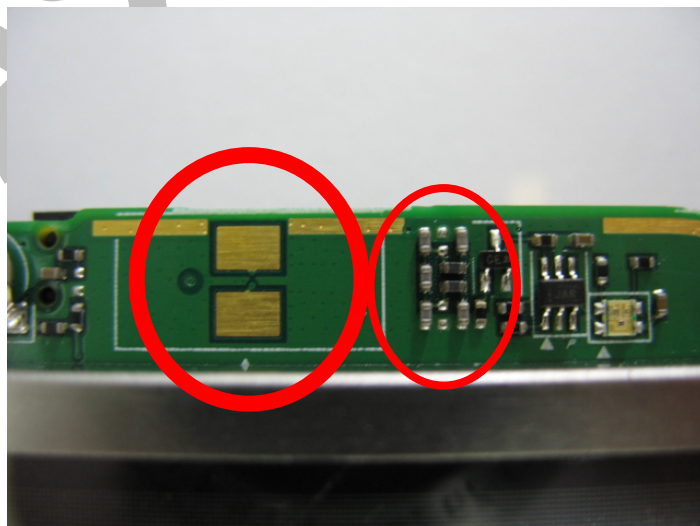
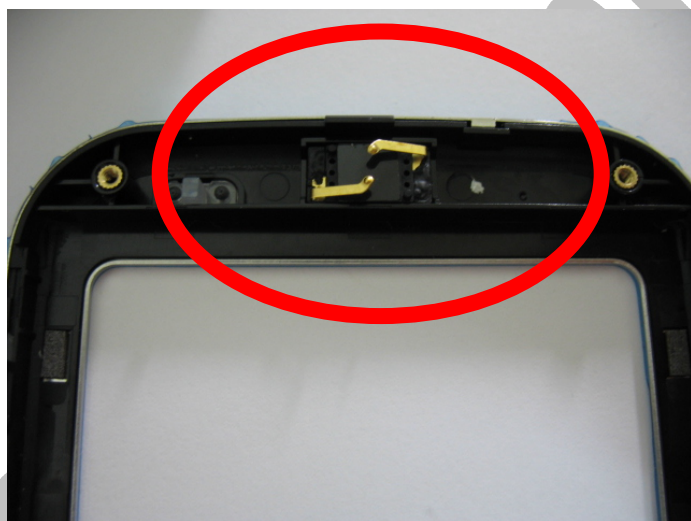
1. Check Speaker and Spring (Speaker2, Speaker3) => Assembly, SMT issue
2. Replace to golden sample => Component issue
3. Check amplifier (U24), PMIC(U14) and peripherals => SMT issue

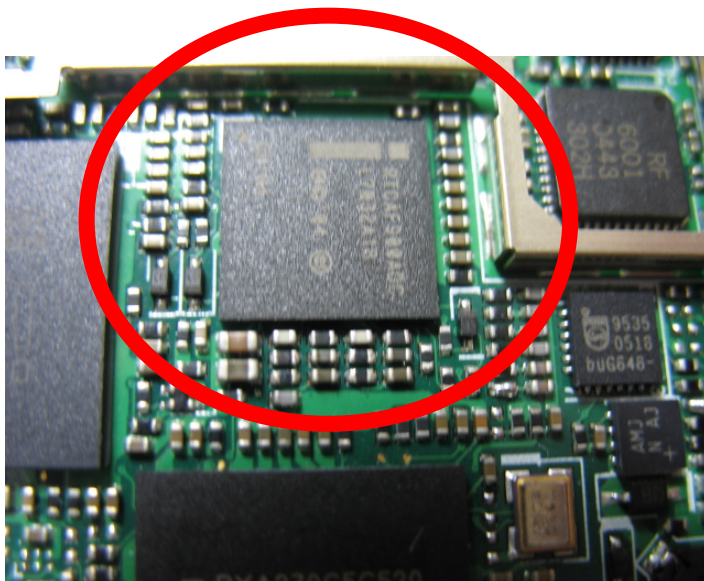




Receiver no sound

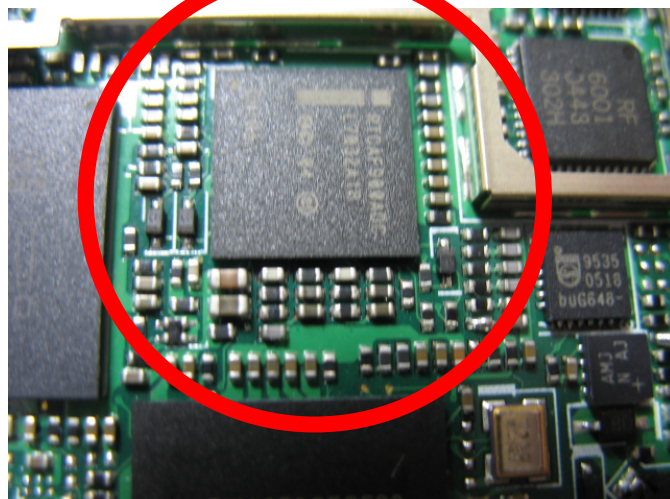
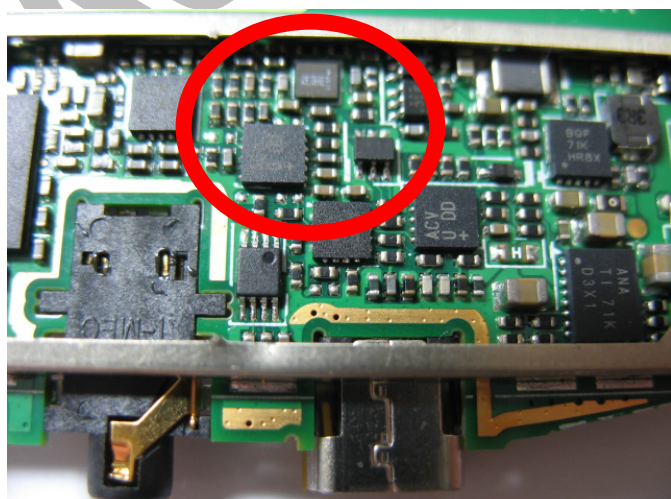
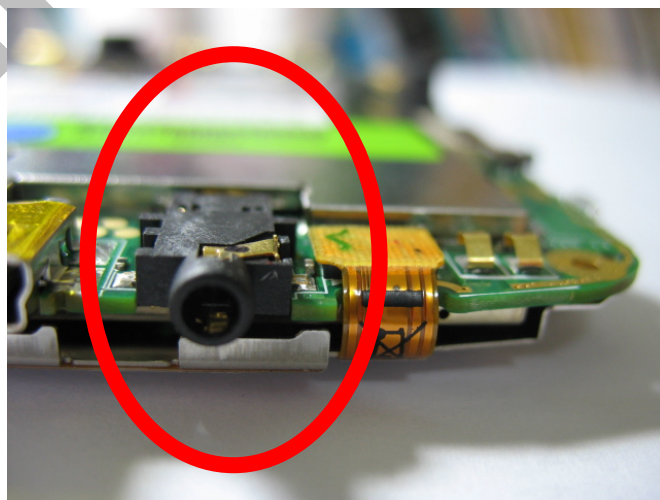
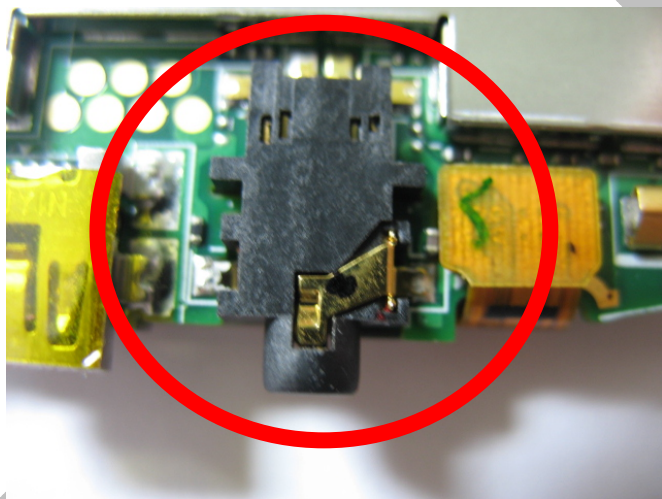
1. Check Receiver and Contact-pad (Speaker1) => Assembly issue
2. Replace to golden sample => Component issue
3. Check Signal RE_N, RE_P, and Codec (U13) => SMT issue





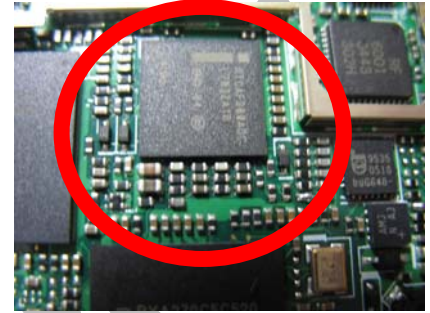
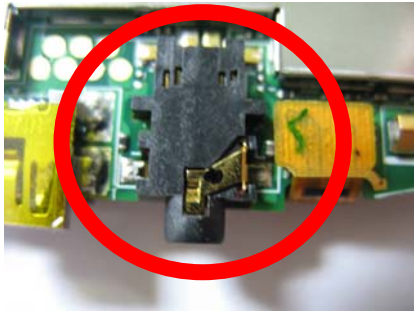
Headphone no sound

1. Check Phone-jack (J1) => SMT issue
2. Check switch (U26), amplifier (U29), Codec (U13) and peripherals => SMT issue



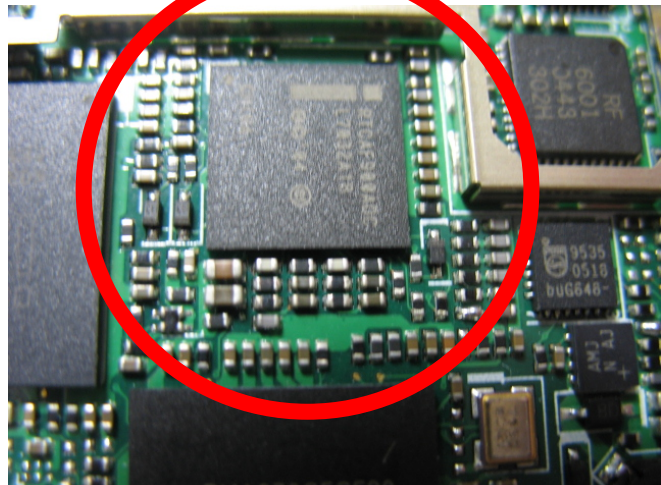
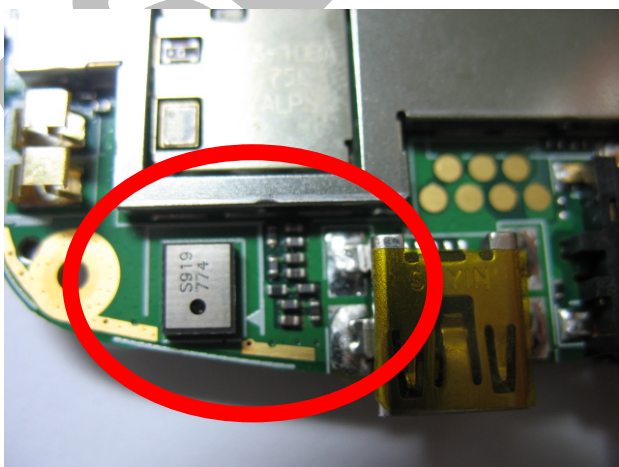
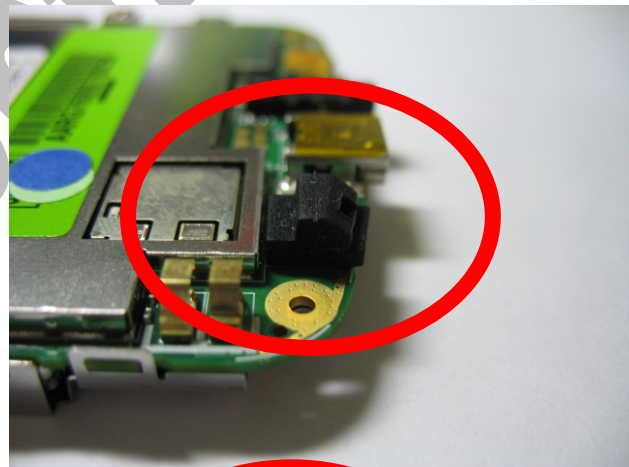
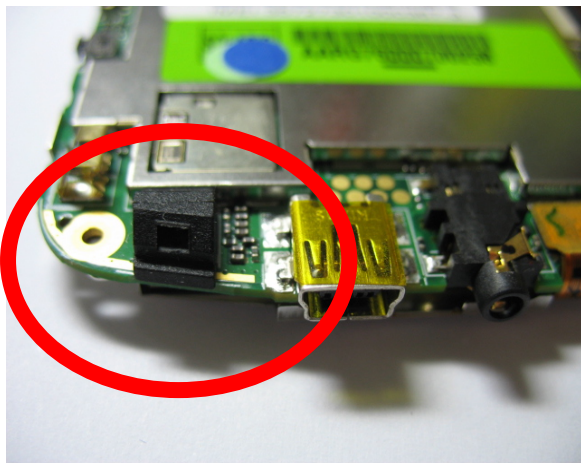
Headphone MIC no record

1. If headphone no sound, please repair headphone first
2. Check power supplied (R224), amplifier (U28), Codec (U13) and peripherals
=> SMT issue



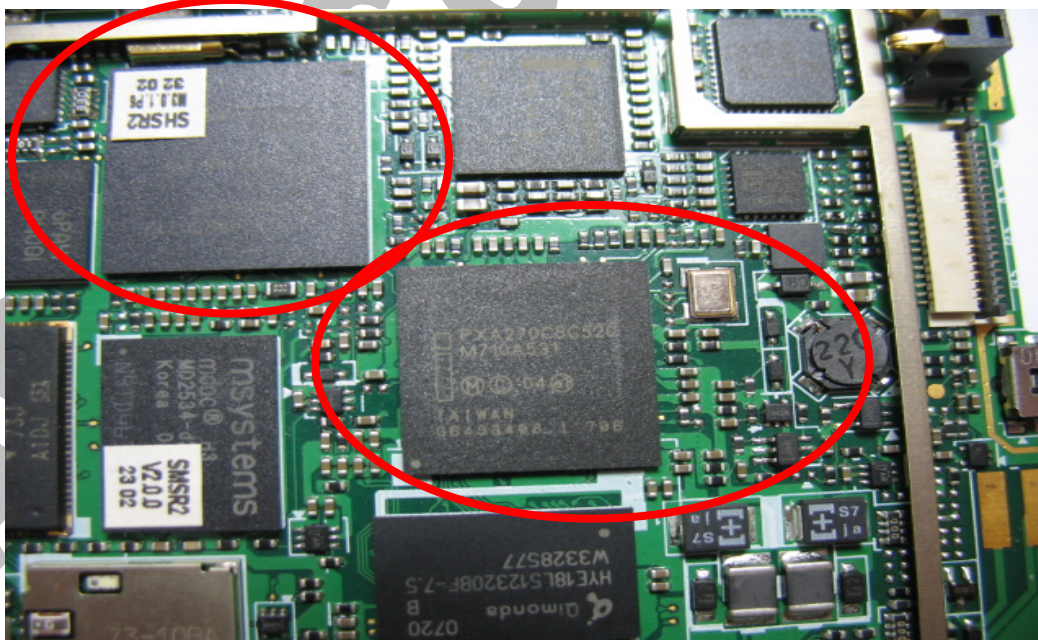
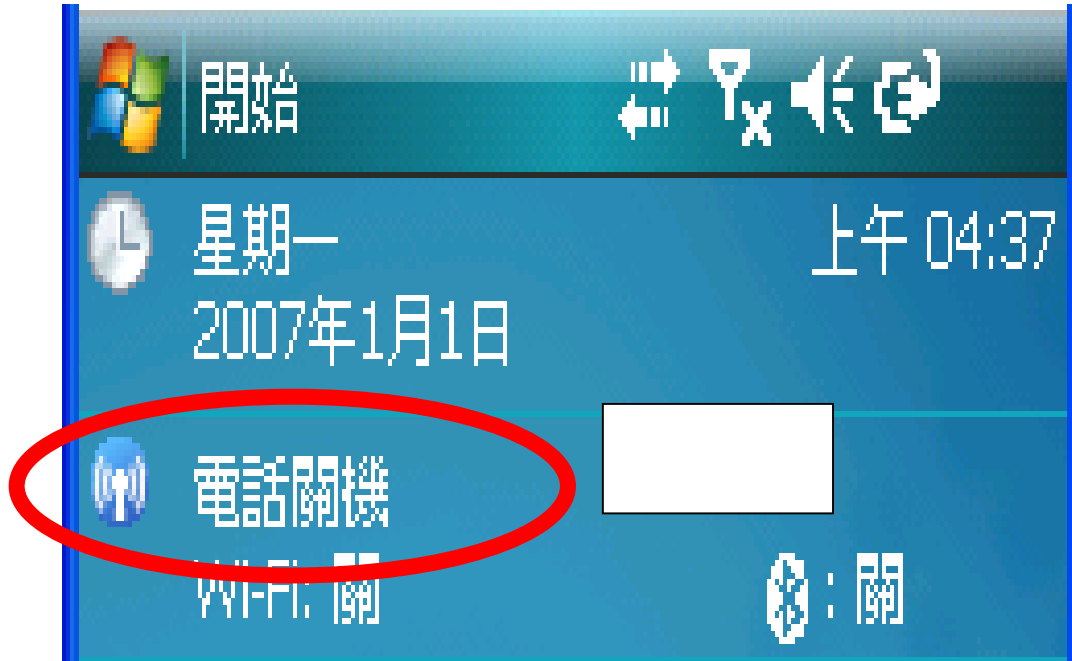
Board mic no record

1. Check assembly rubber => Assembly issue
2. Check SMT mic (U27), Codec (U13) and peripherals => SMT issue



7.16 Standby current failed

1. Manual phone-off and press power-key to entry suspend-mode => Test program issue
2. Remove camera module => Component issue
3. Measure signal PWR_EN (T64), Low. VCXO_CLK (C86), Low => SMT issue



8. RF Repair Requirement

8.1 SW:

IFL software
GSM and WCDMA debug tool
Hermon image database files

8.2 HW:

Specific fixture for repair and test, following must be included

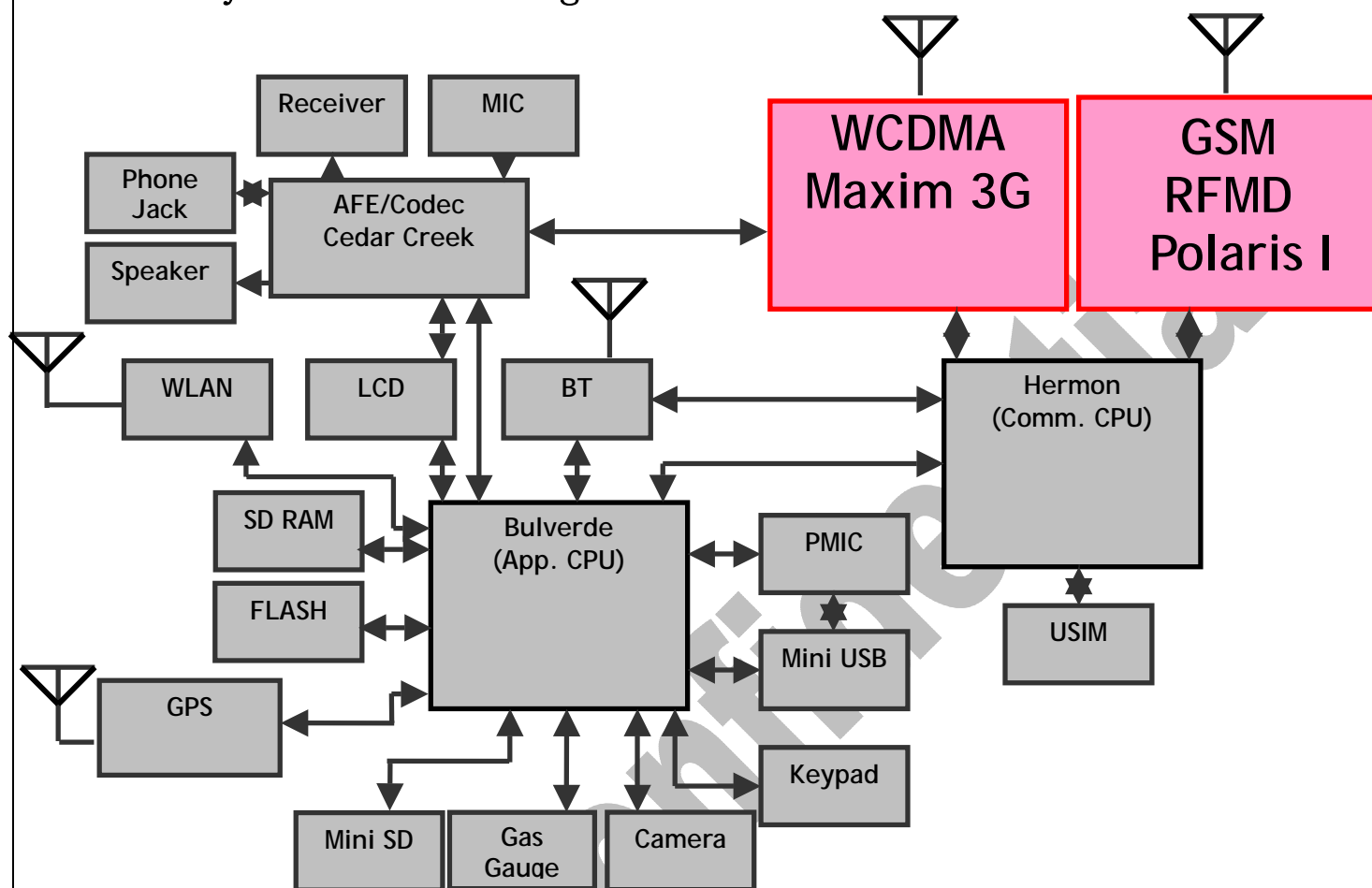
- i. Hermon USB Contact and USB Cable
- ii. Power Supply Contact
- iii. RF Connector and RF cable (30cm)
- iv. High Frequency Probe with DC Block

8.3 Equipment:

1. PC
2. Spectrum Analyzer (up to 3.0 GHz)
3. Signal Generator (up to 3.0GHz)
4. Communication tester: Agilent 8960, CMU200 or Anritsu 8820
5. Digital Multi-meter
6. Power Supply

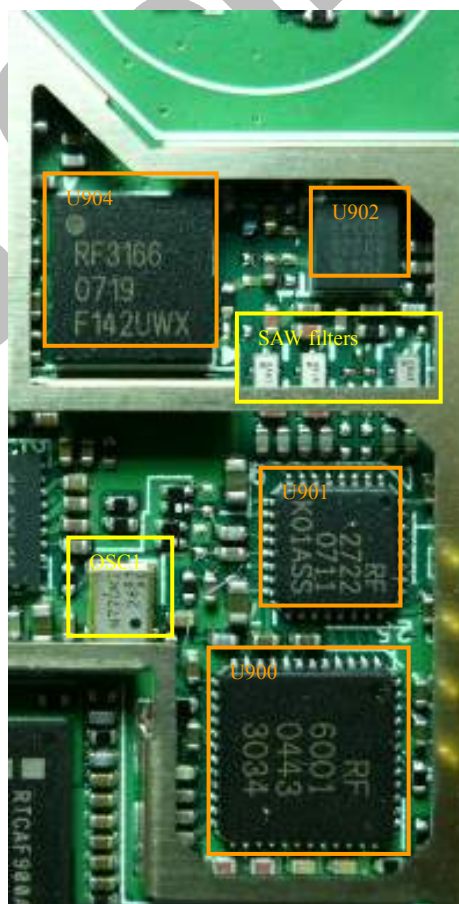
9. Block Diagram

9.1 System Block Diagram

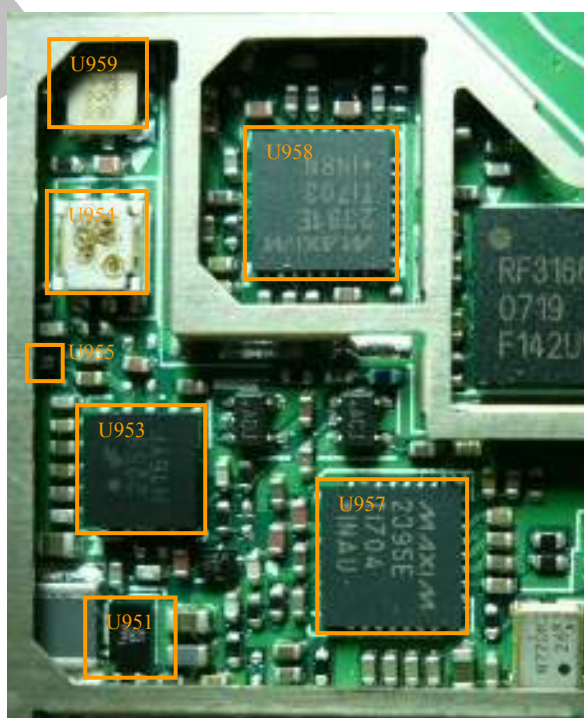
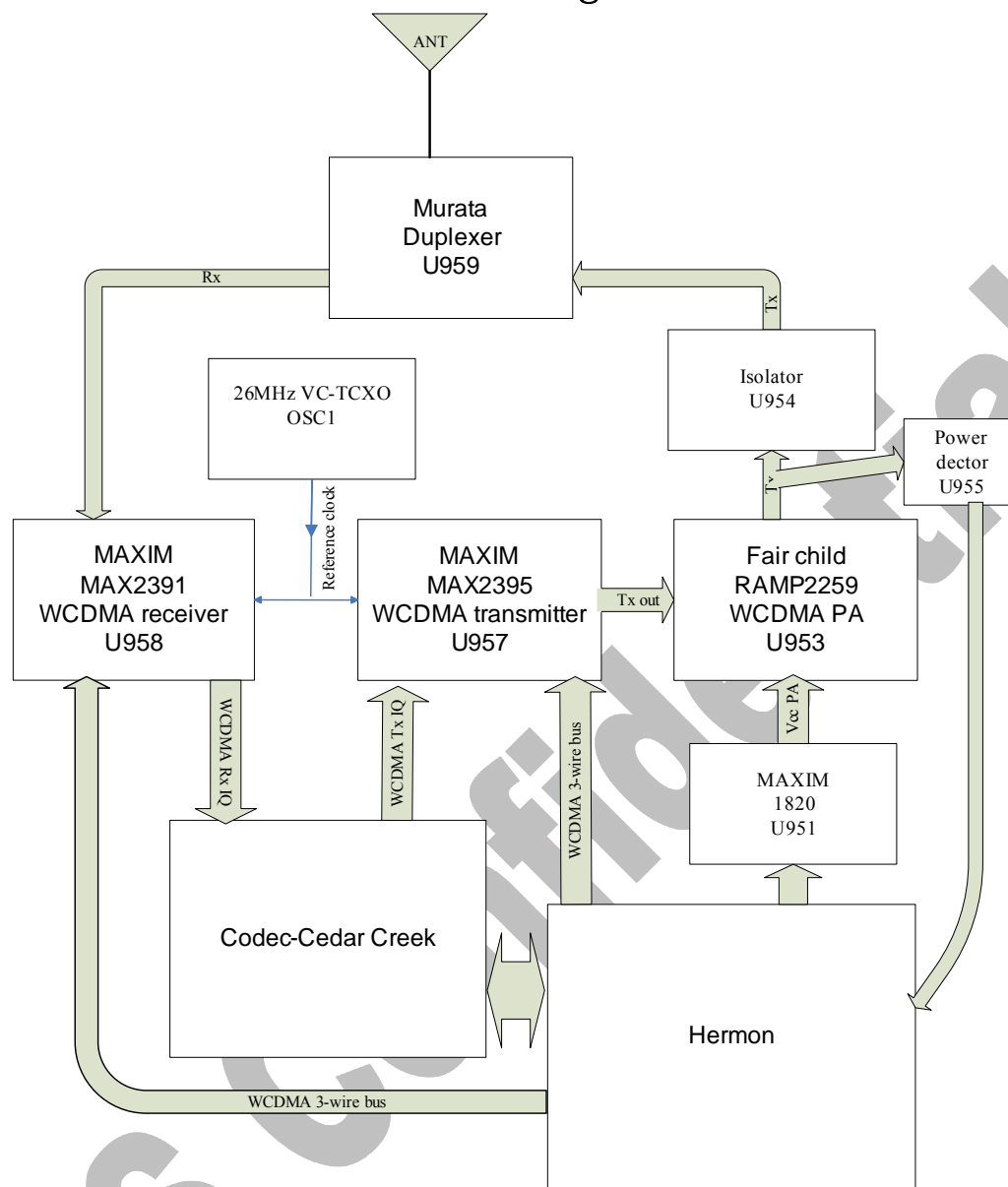


Block diagram of the RF front end of the Hermon system:

- ANT** (Antenna) is connected to the **EPCOS A030 T/R switch U902**.
- The **EPCOS A030 T/R switch U902** is connected to the **RFMD RF2722 GSM receiver U901** via the **Rx in** line.
- The **RFMD RF2722 GSM receiver U901** is connected to the **RFMD RF3166 GSM PA U904** via the **Tx out** line.
- The **RFMD RF2722 GSM receiver U901** is connected to the **RFMD RF6001 GSM transceiver U900** via the **Tx out** and **Rx IQ** lines.
- The **RFMD RF6001 GSM transceiver U900** is connected to the **26MHz VC-TCXO OSC1** via the **Reference clock** line.
- The **RFMD RF6001 GSM transceiver U900** is connected to the **Hermon** system via the **Digital IQ** and **GSM 3-wire bus** lines.



9.3 WCDMA – Maxim 3G Block Diagram



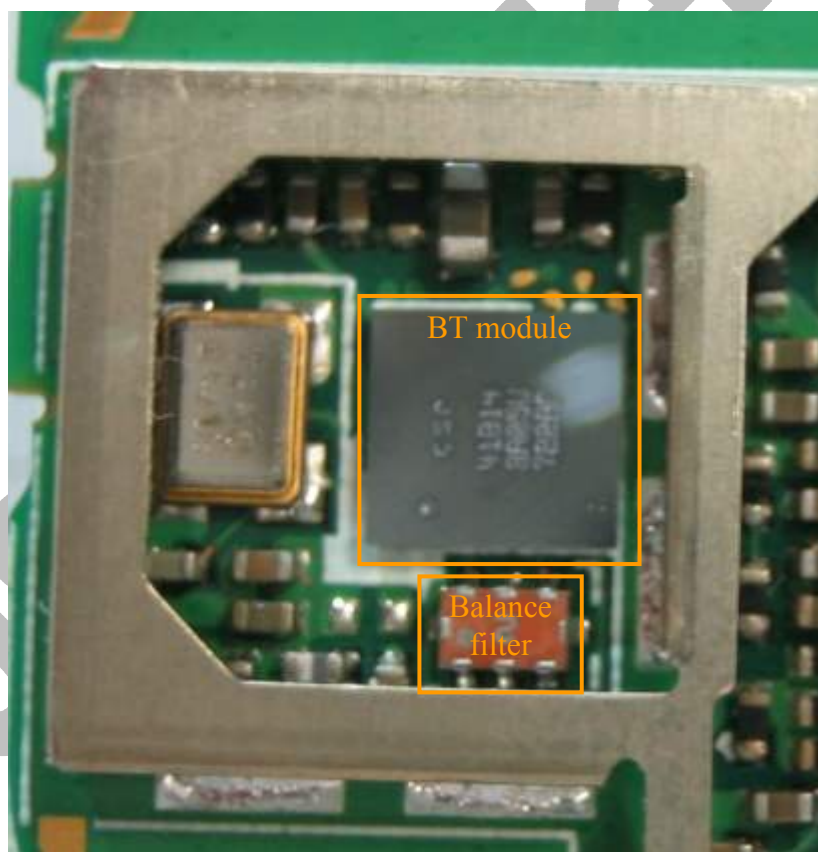
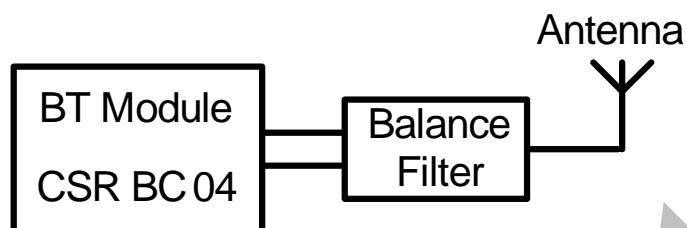
9.4 Blue tooth – CSR BC04

(1) BT Introduction

Frequency: 2402(ch0) ~ 2480(ch78) MHz

Maximum Transmitter power: -6 ~ +4 dBm

(2) Bluetooth circuitry



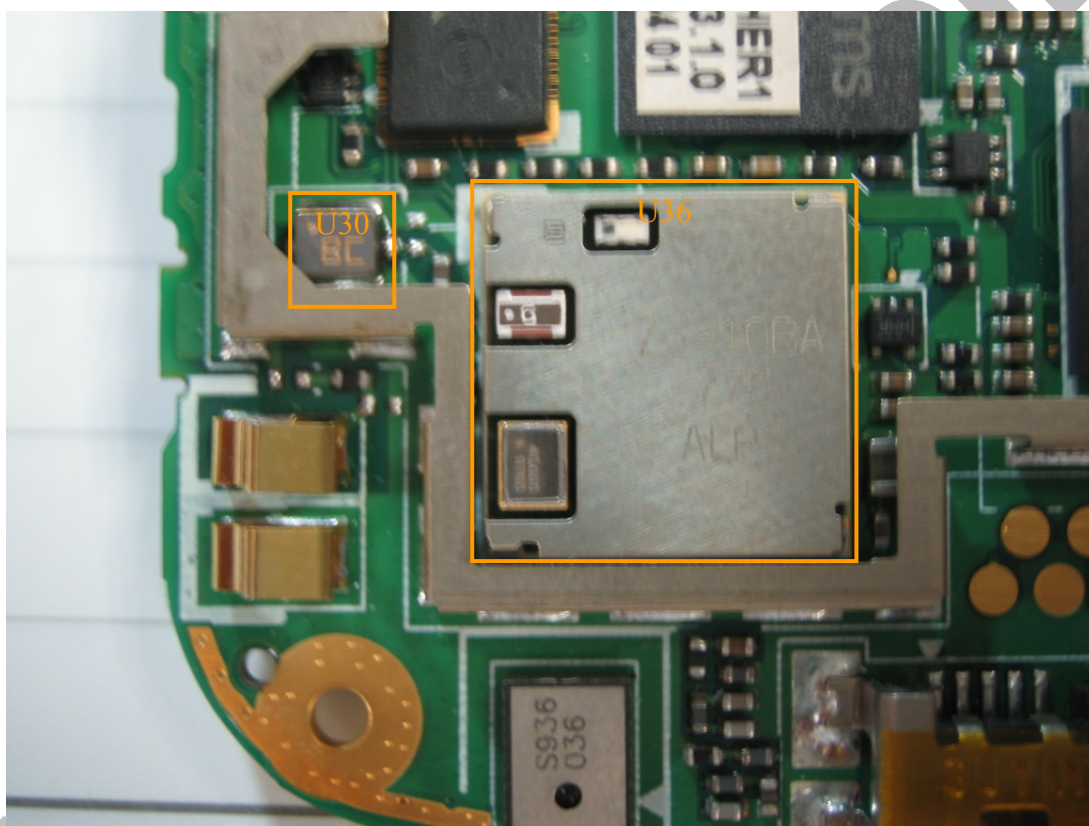
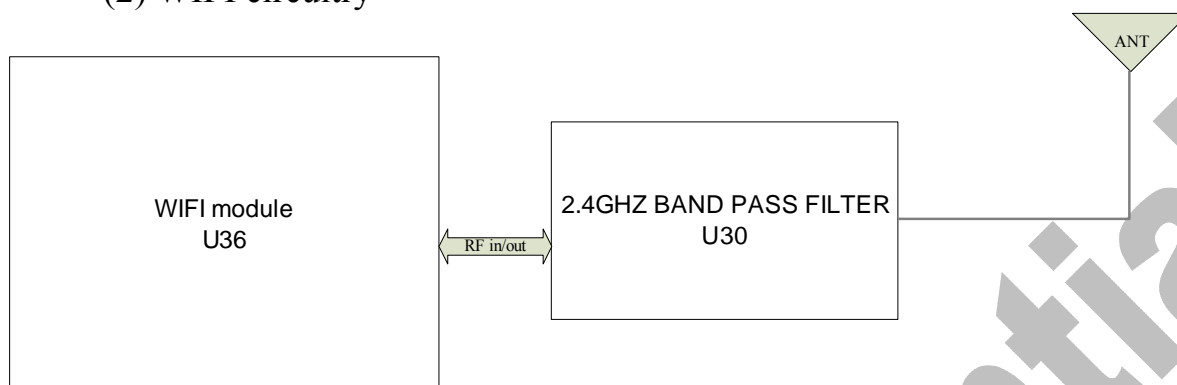
9.5 WIFI- UGGZ3X10BA

(1) WIFI introduction

Frequency: 2412~ 2472 MHz

Maximum output power: 15 dBm

(2) WIFI circuitry

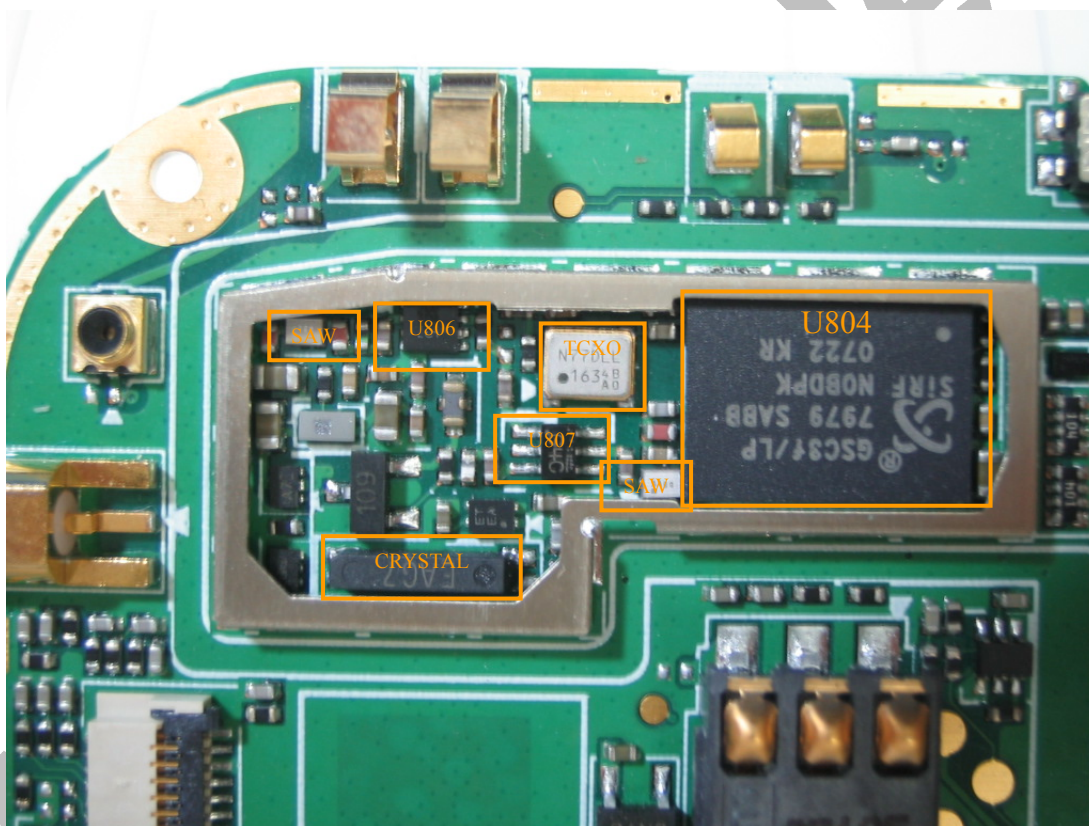
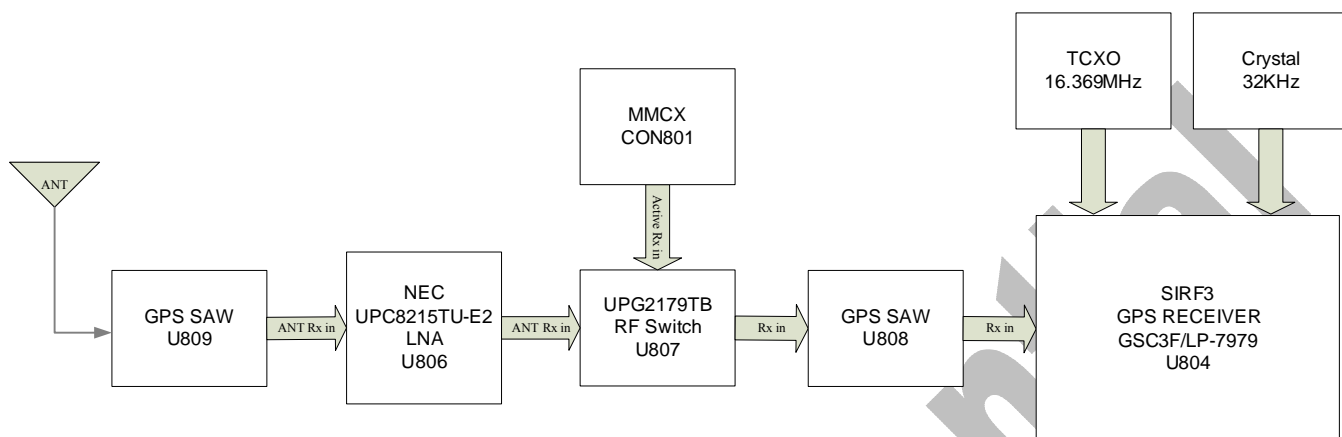


9.6 GPS– GSC3F/LP-7

(1) GPS Introduction

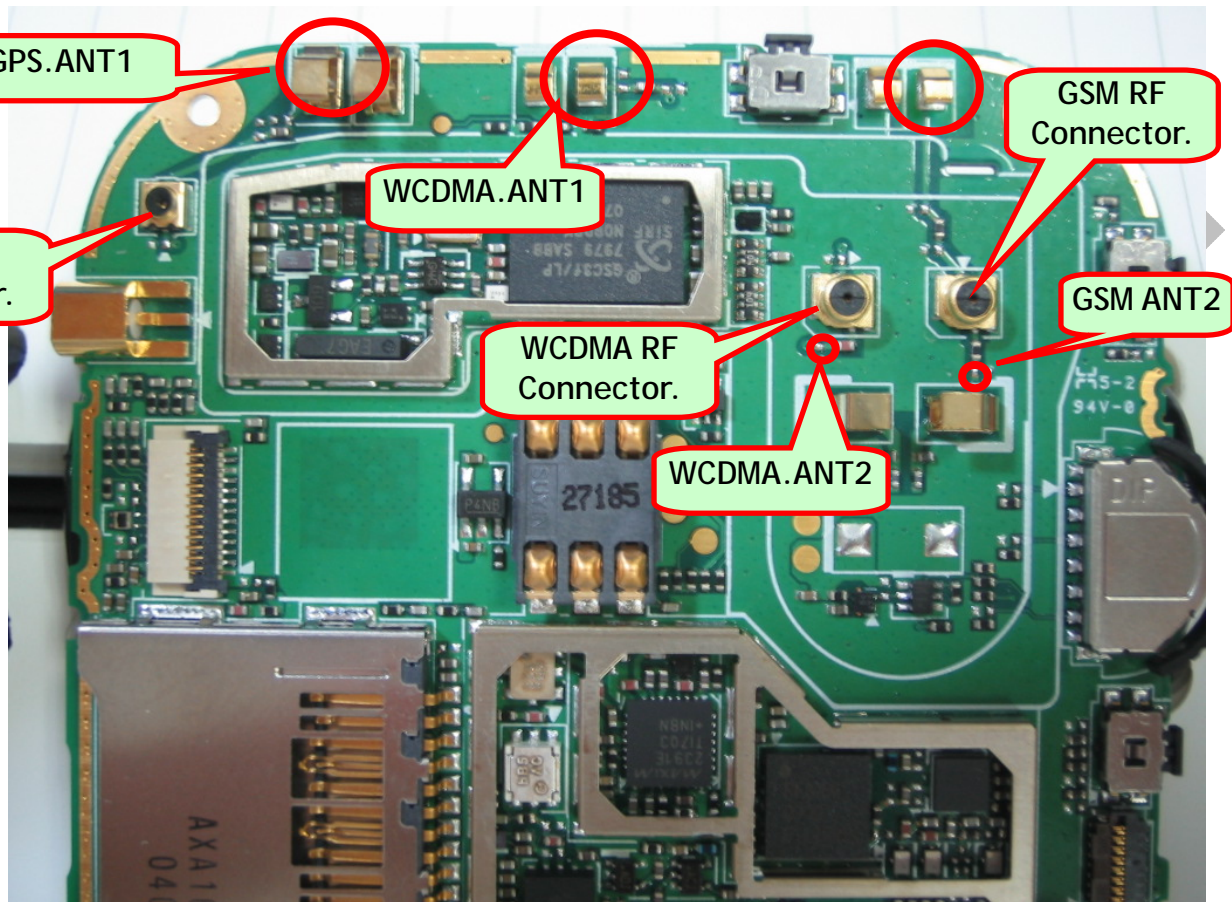
Frequency: 1575.42 MHz

(2) GPS circuitry



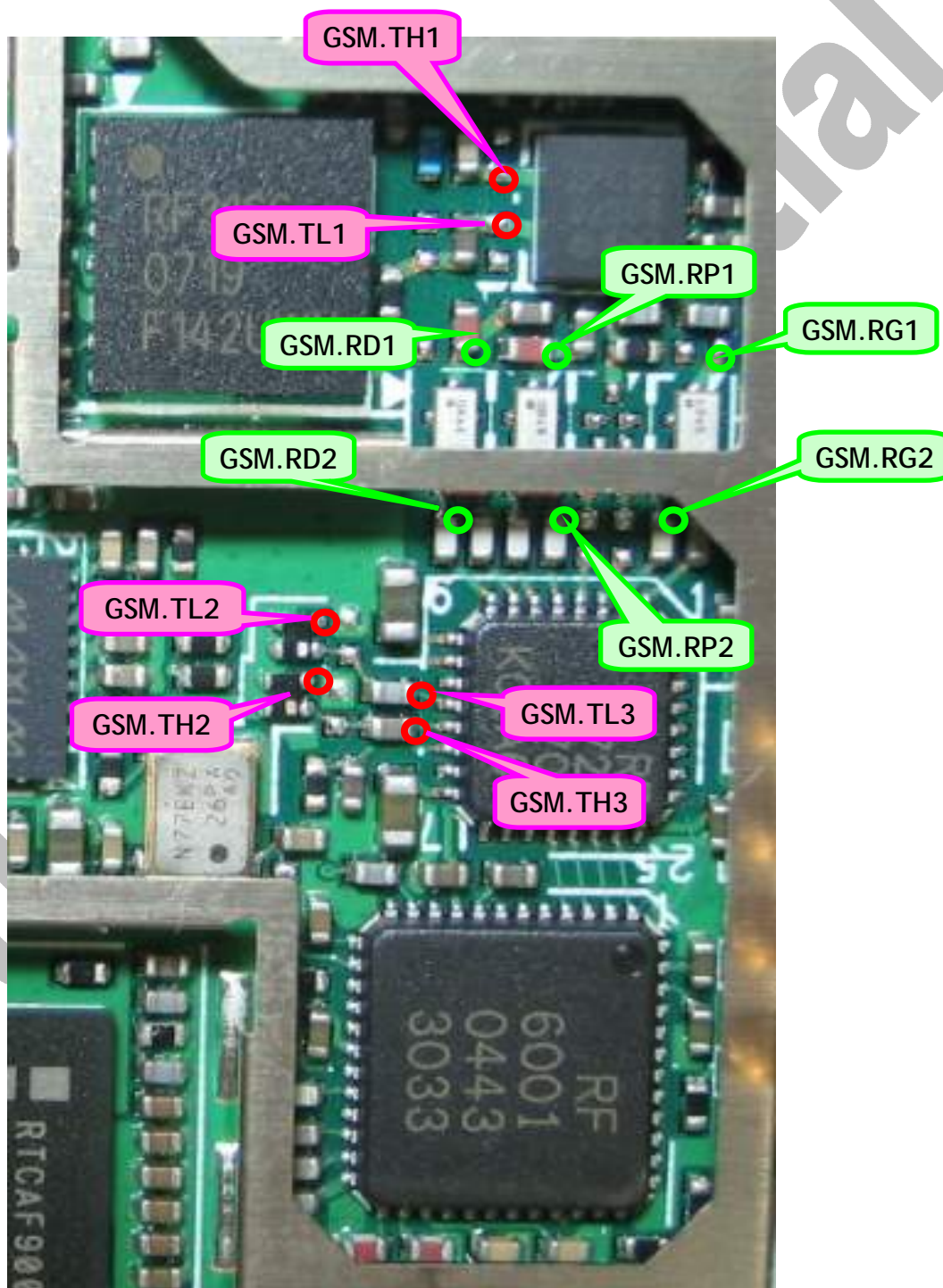
10. RF Circuit Test Points Location

10.1 Backside Antenna Area Test Points

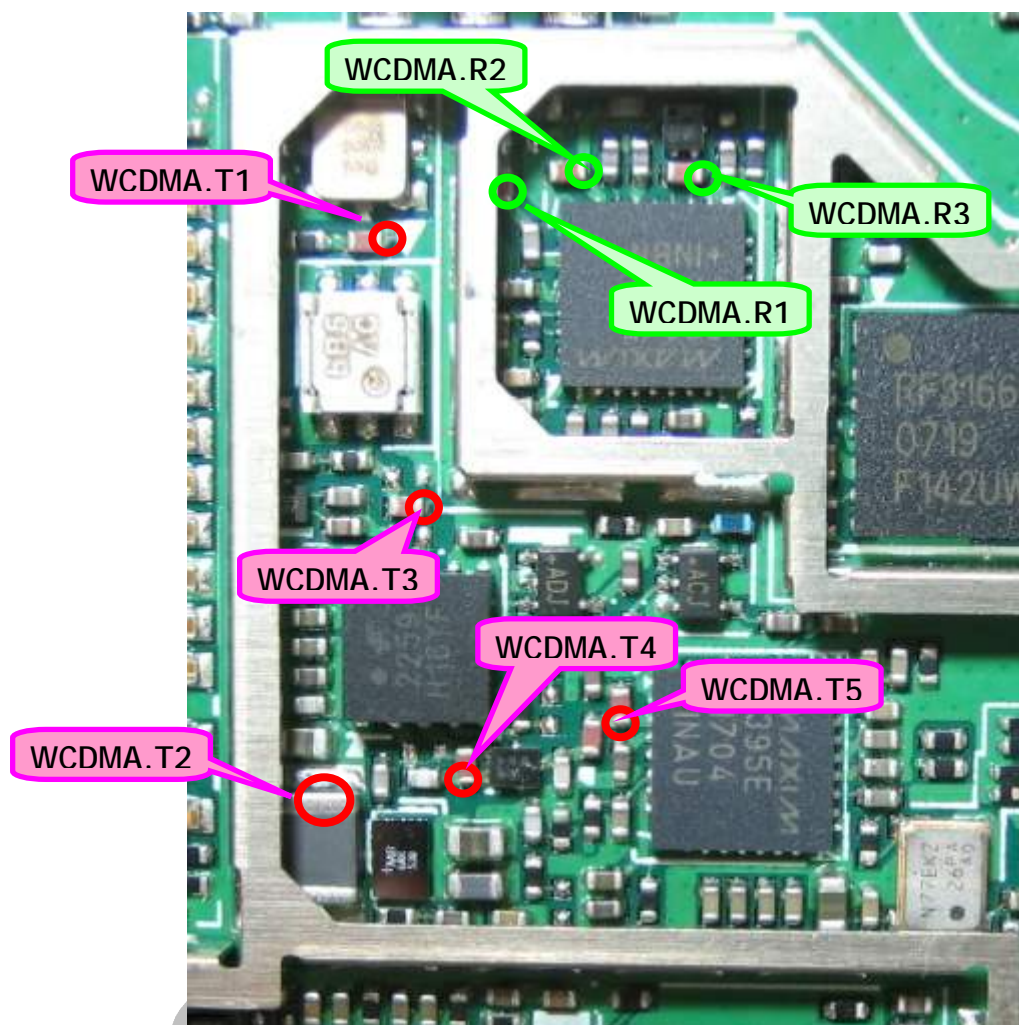


10.2 GSM/GPRS Test Points

1. Definition of test point's suffix:
2. TH : Tx High band, DCS1800 & PCS 1900
3. TL : Tx Lowland, GSM900
4. RG : Rx GSM900
5. RP : Rx PCS1900
6. RD : Rx DCS1800



10.3 WCDMA Test Points



11. GSM & WCDMA RF Tx/Rx Path

How RF signal is transmitted and received between components on Solaris PCB is explained in this section. It is important to realize RF transmission path (Tx) and receiving path (Rx) before starting out to repair NG PCB, because engineers need to choose proper test points, which assist us to distinguish where the problem is. The following paragraphs describe both Tx and Rx path in GSM and WCDMA bands. The related test points are listed in previous section.

11.1 GSM Tx path

Transceiver, RF6001 (U900), receives IQ signals coming from base band, and output signals of RF6001 Pin22 and Pin23 are transmitted into the buffer of receiver, RF2722. Then RF2722 Pin12 and Pin13 emit the low band signal (GSM900) and high band signals (DCS1800 or PCS1900) separately. In the low band, output signal from RF2722 Pin12 passes through C917, attenuator (U903) and RF3166 (U904) Pin7, power amplifier, sequentially. Transmission and receiving switch (U902), also named T/R switch, gets the amplified signal from RF3166 Pin23 via matching circuits. RF signal coming from T/R switch Pin12 is transmitted to connector (Con850) and radiated via the GSM antenna of Solaris.

In the high band, output signal from RF2722 Pin13 passes through C934, attenuator (U905) and RF3166 (U904) Pin1, power amplifier, sequentially. Transmission and receiving switch (U902), also named T/R switch, gets the amplified signal from RF3166 Pin30 via matching circuits. RF signal coming from T/R switch Pin10 is transmitted to connector (Con850) and radiated via the GSM antenna of Solaris.

11.2 GSM Rx path

RF signals, receiving from base station via the GSM antenna, pass through connector (Con850) and T/R switch Pin6 (U902) sequentially. There are three output pins of T/R switch, including Pin1, Pin14, and Pin15. The output path which RF signal is transmitted depends on band selection of T/R switch.

In GSM900 band, the receiving signal, which is transmitted from T/R switch Pin1, passes through SAW filter (BPF1) and matching circuits sequentially. Upon RF2722 (U901) receiving the signal, it is amplified in the Low Noise Amplifier (LNA) of the receiver, down converted the signal's frequency and transformed into IQ signals. The IQ signals from RF2722 Pin20, Pin21, Pin22, and Pin23 travel to the transceiver RF6001 (U900). The transceiver RF6001 transfers the signals to the base band signals.

In DCS1800 band, the receiving signal, which is transmitted from T/R switch Pin14, passes through SAW filter (BPF4) and matching circuits sequentially. Upon RF2722 (U901) receiving the signal, it is amplified in the Low Noise Amplifier (LNA) of the receiver, down converted the signal's frequency and transformed into IQ signals. The IQ signals from RF2722 Pin20, Pin21, Pin22, and Pin23 travel to the transceiver RF6001 (U900). The transceiver RF6001 transfers the signals to the base band signals.

In PCS1900 band, the receiving signal, which is transmitted from T/R switch Pin15, passes through SAW filter (BPF3) and matching circuits sequentially. Upon RF2722 (U901) receiving the signal, it is amplified in the Low Noise Amplifier (LNA) of the receiver, down converted the signal's frequency and transformed into IQ signals. The IQ signals from RF2722 Pin20, Pin21, Pin22, and Pin23 travel to the transceiver RF6001 (U900). The transceiver RF6001 transfers the signals to the base band signals.

11.3 WCDMA Tx path

The output signal from transmitter MAX2395 Pin2 travels to SAW filter (BPF5), and RMPA2259 Pin2 sequentially. The output power coming from RMPA2259 Pin8 passes through isolator (U954), duplexer Pin1 (U959), and connector (Con851). At last, the RF signal is radiated via WCDMA antenna of Solaris.

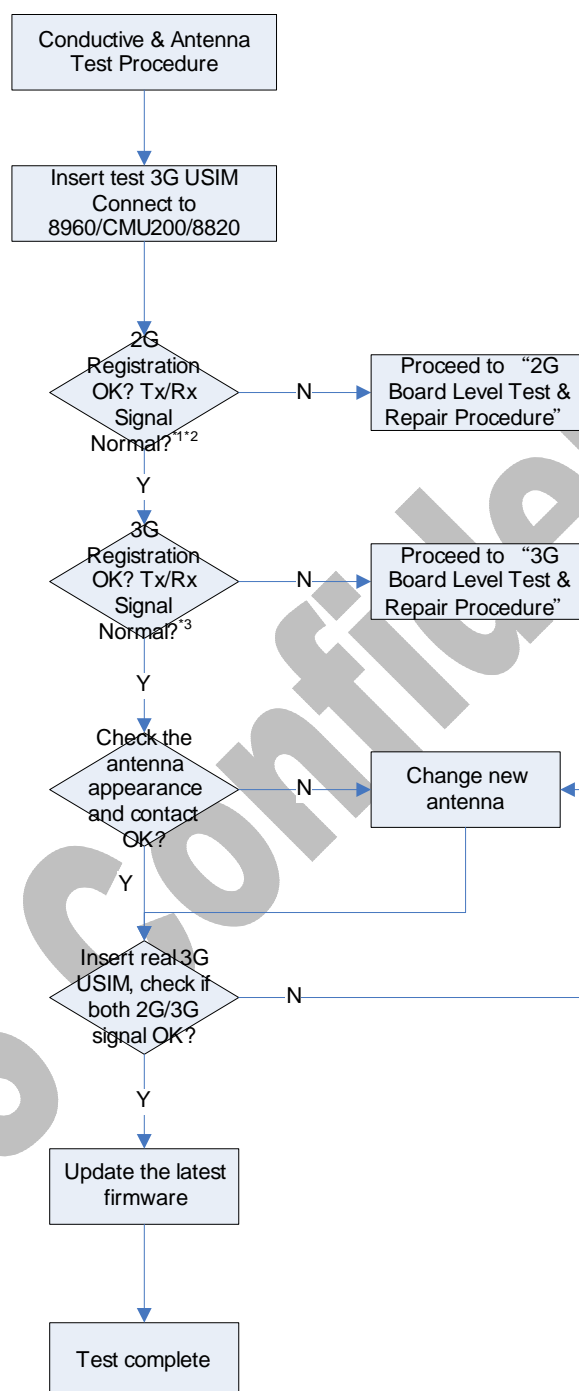
11.4 WCDMA Rx path

RF signal in WCDMA, receiving from base station via the WCDMA antenna, passes through connector (Con851) and duplexer Pin3 sequentially. MAX2391 Pin9 (U958), built-in LNA, receives the signal from duplexer. Then the signal is transmitted to SAW filter (BPF6) and returns to receiver MAX2391 again. After down converting the signal's frequency and transforming into IQ signals, the IQ signals from MAX2391 Pin20, Pin21, Pin22, and Pin23 travel to base band.

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12. Test & Repair Flow Chart

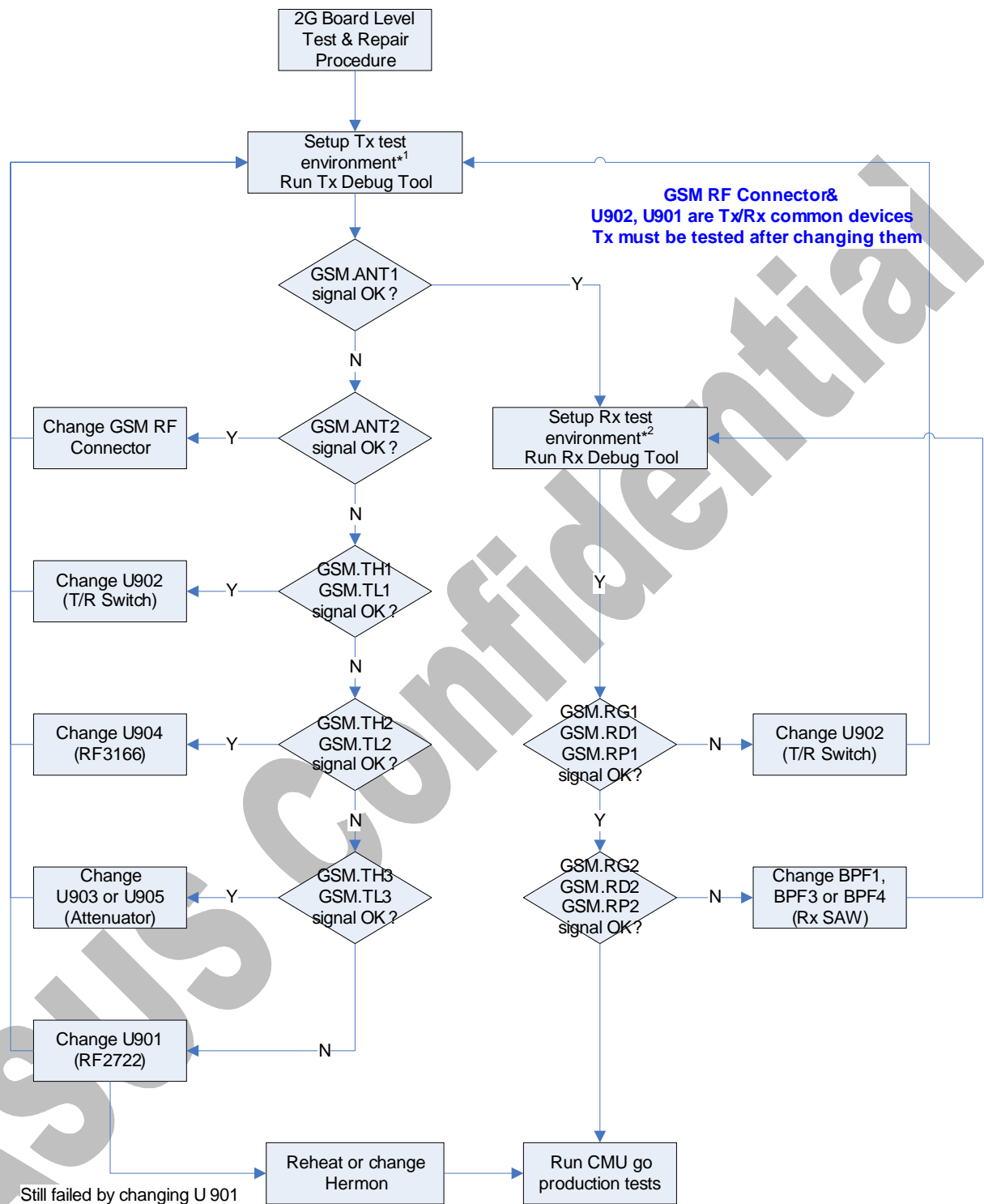
12.1 Conductive & Antenna Test Procedure



*1 : Refer to appendix A1 for GSM/GPRS typical values of conductive test

*2 : Refer to appendix A2 for WCDMA typical values of conductive test

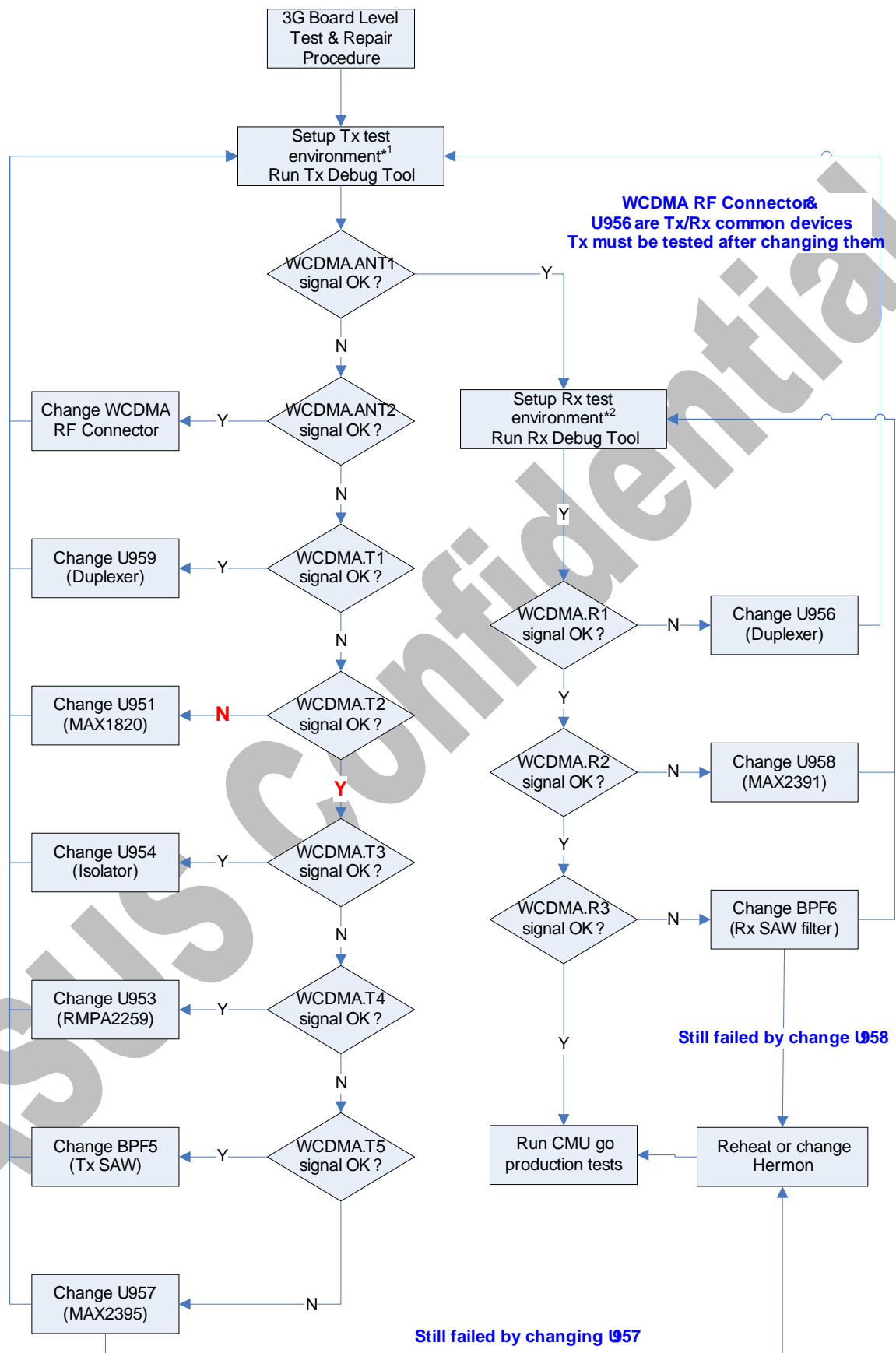
12.2 GSM/GPRS Test & Repair Procedure



*1 : Refer to appendix B1 for Tx test environment setup

*2 : Refer to appendix B2 for Rx test environment setup

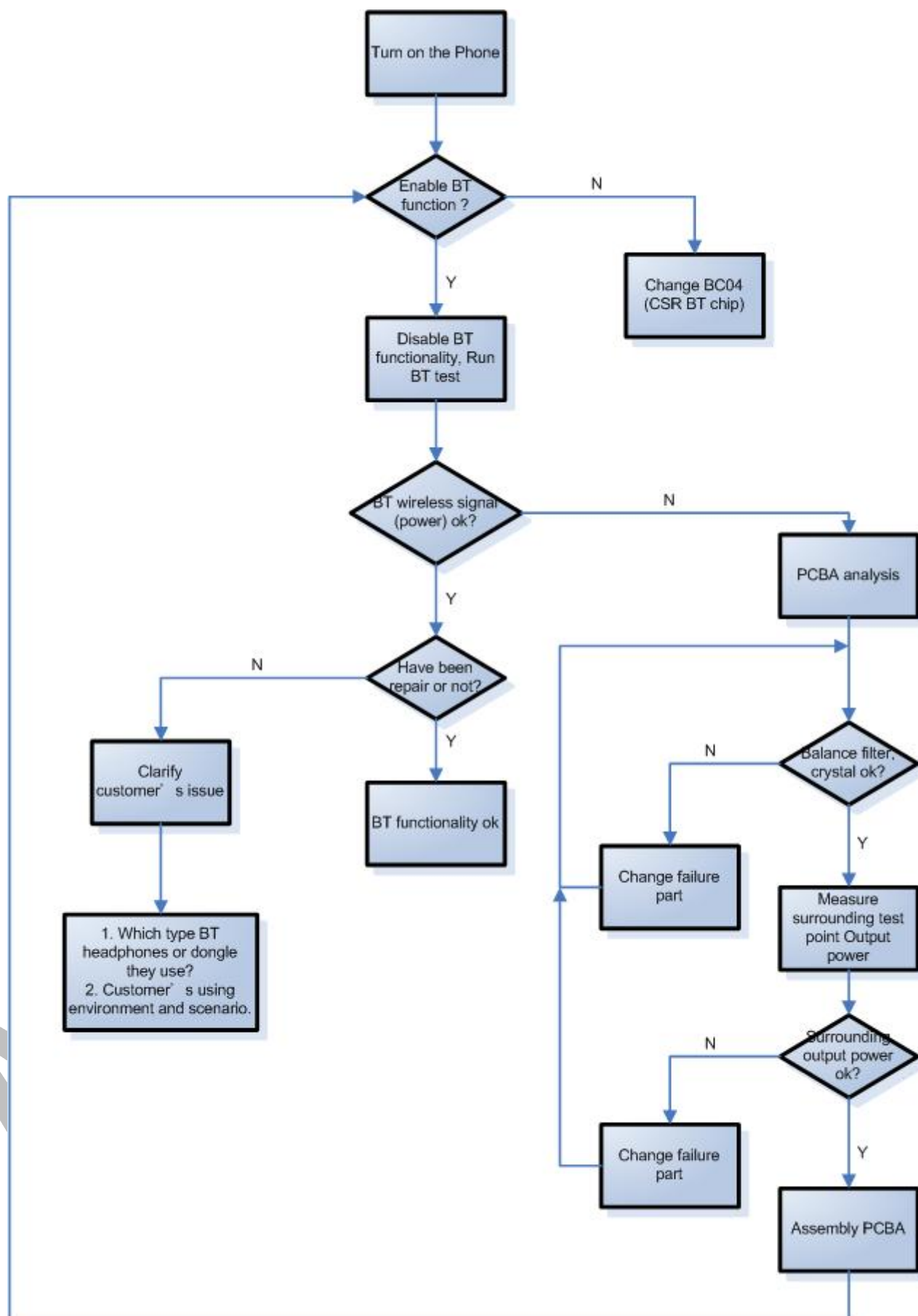
12.3 WCDMA Test & Repair Procedure



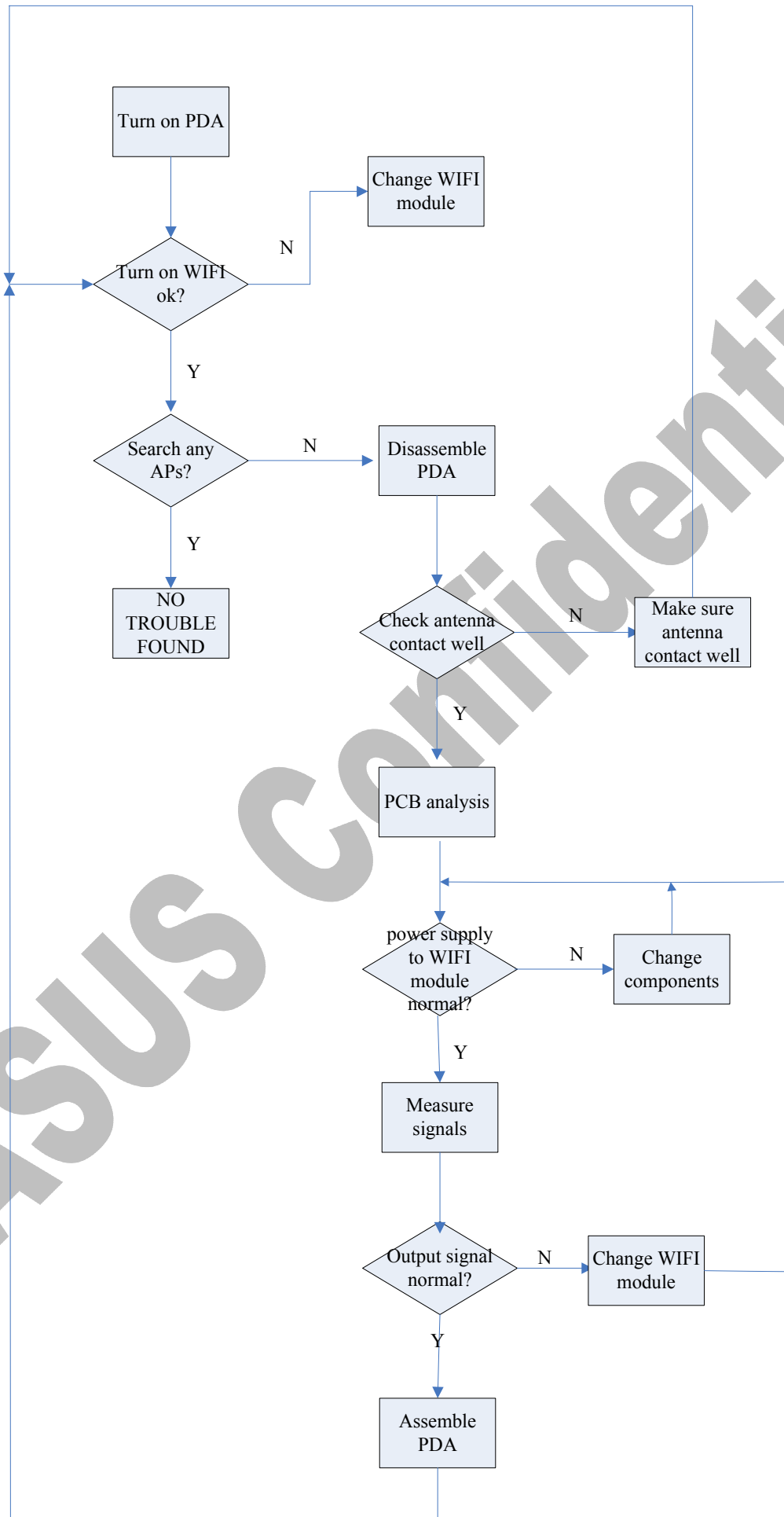
*1 : Refer to appendix B1 for Tx test environment setup

*2 : Refer to appendix B2 for Rx test environment setup

12.4 Blue tooth Test & Repair Procedure



12.5 WIFI Test & Repair Procedure

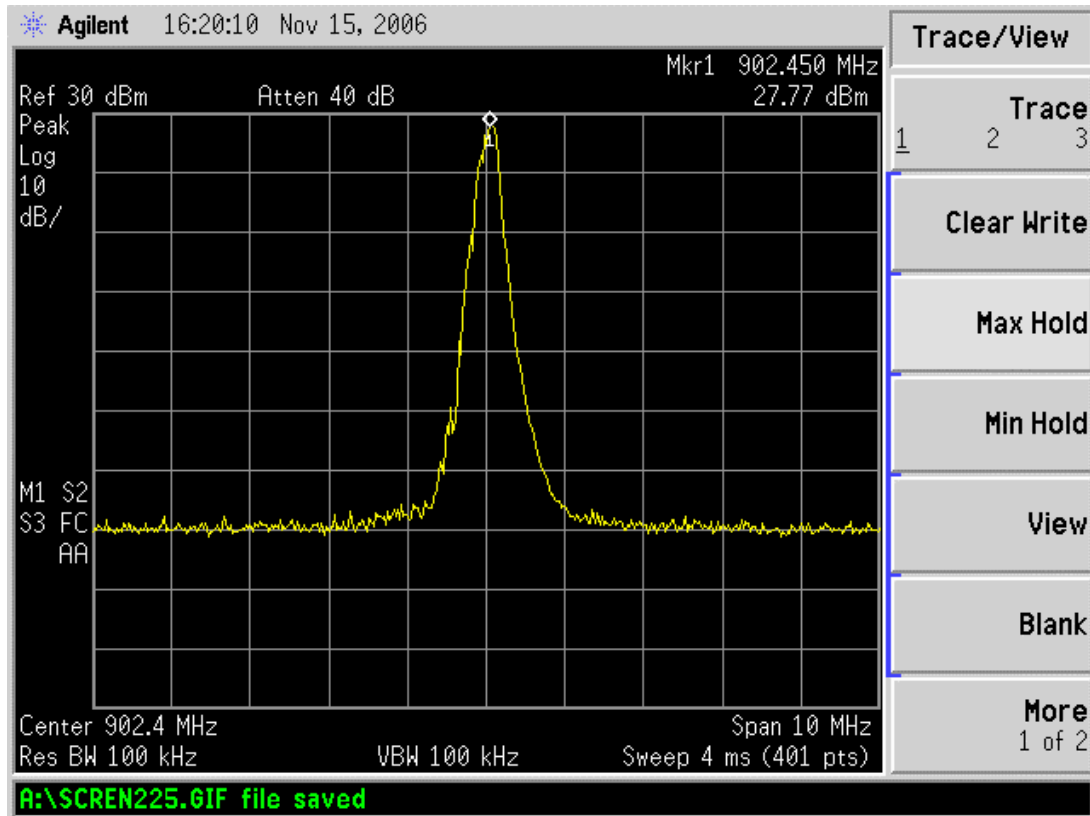


13. Test Points Signal Examples

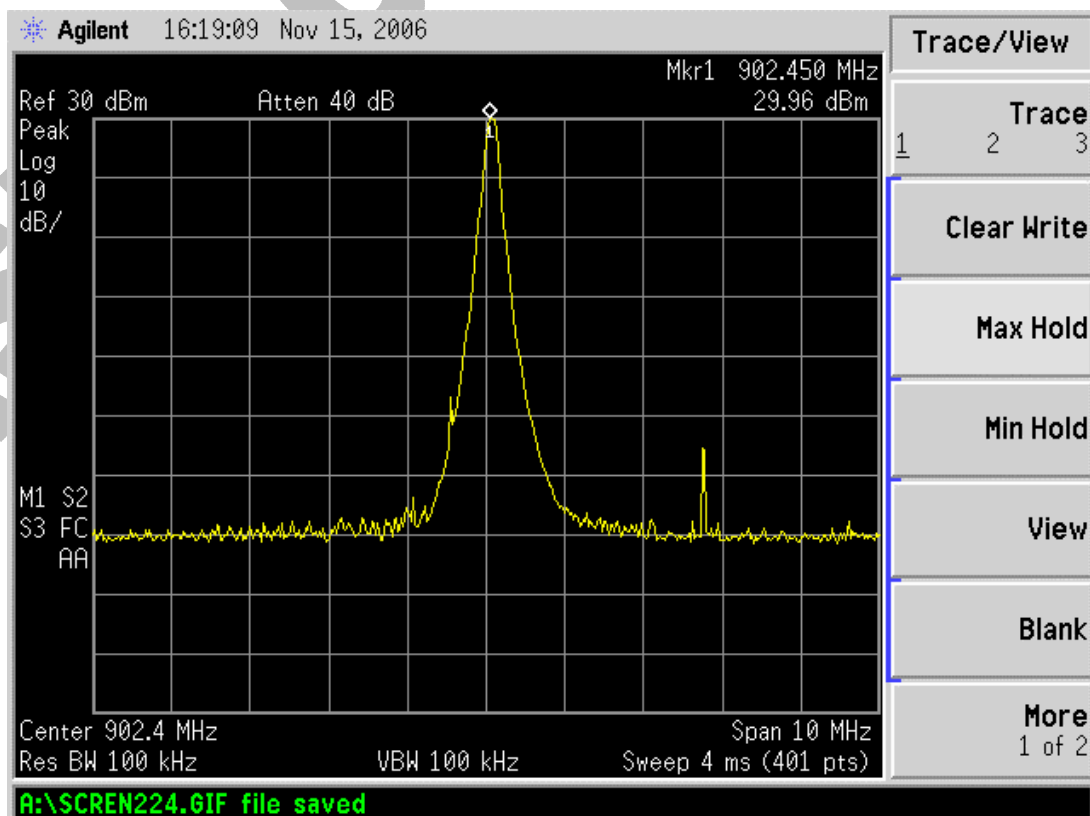
13.1 GSM900

Due to the spec of probe is not exactly the same please use the “working sample” for signal reference.

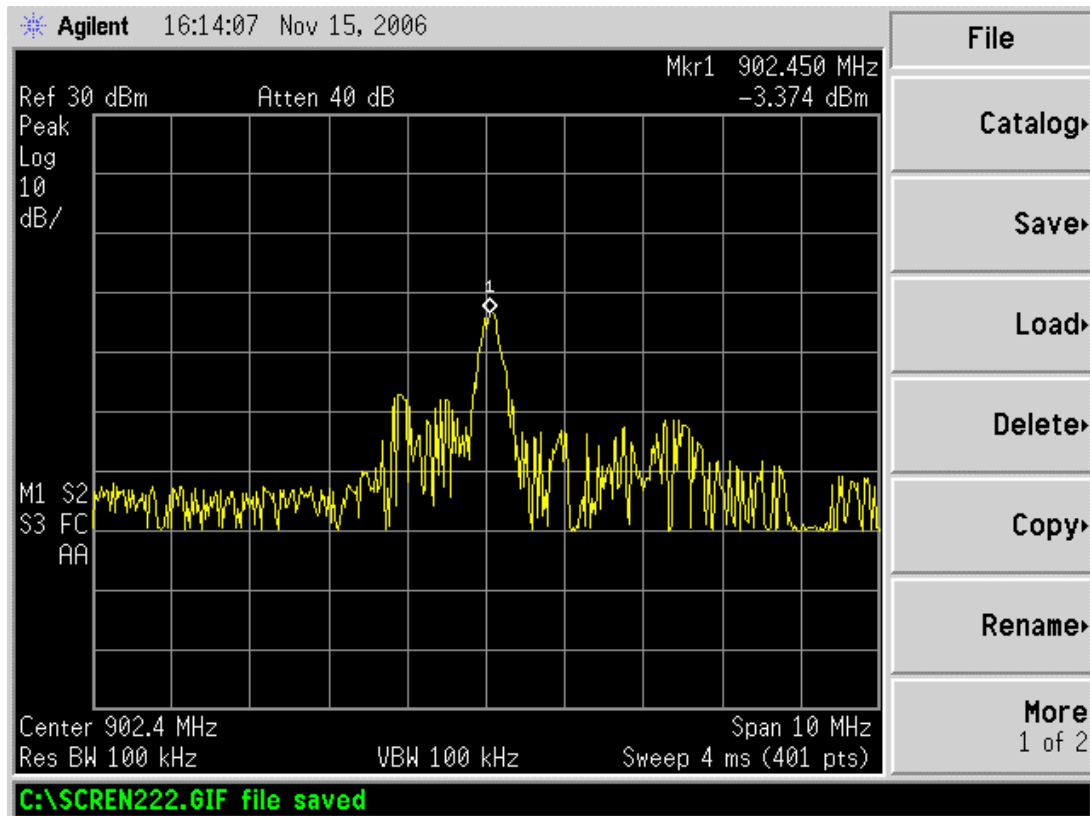
GSM.ANT1 :



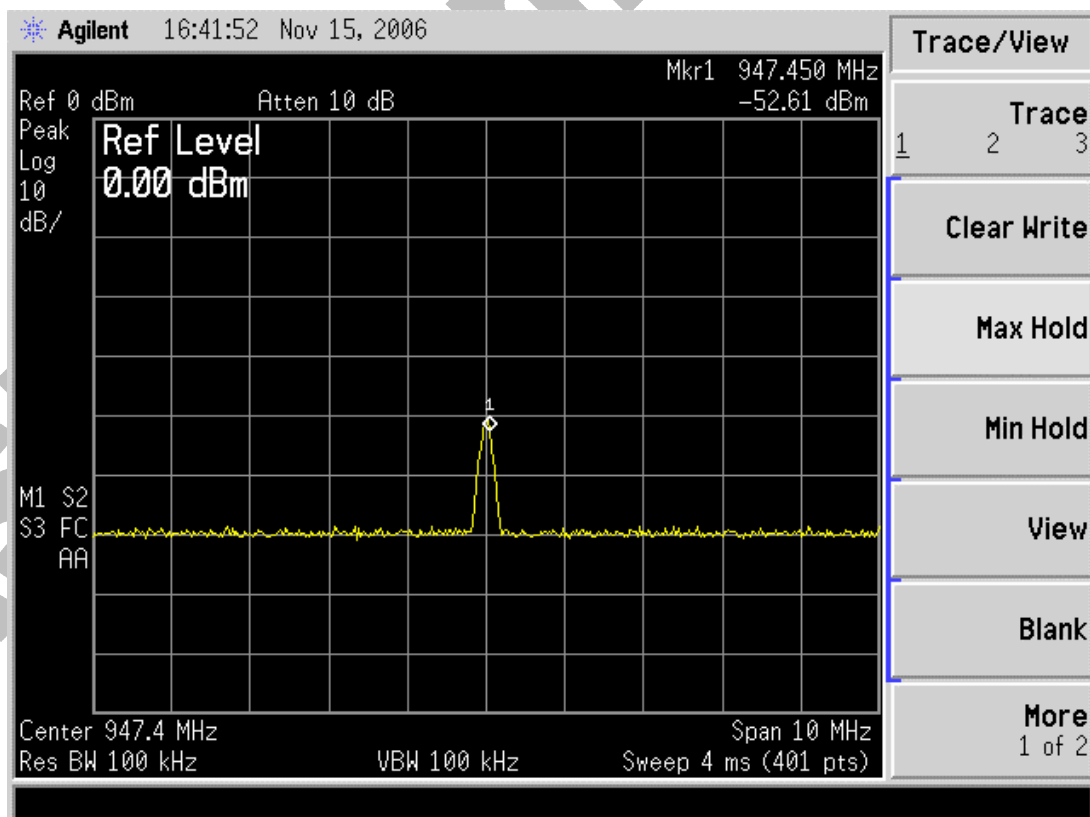
GSM.ANT2 & GSM.TL1



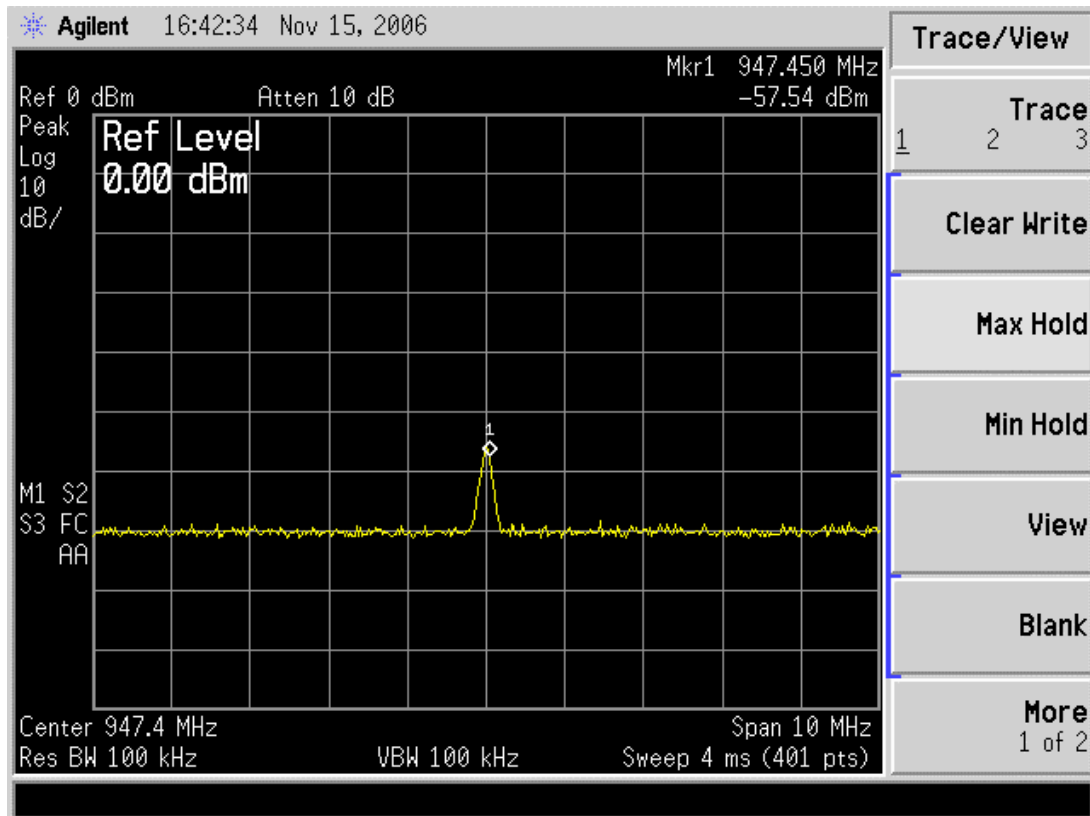
GSM.TL2 & GSM.TL3



GSM.RG1



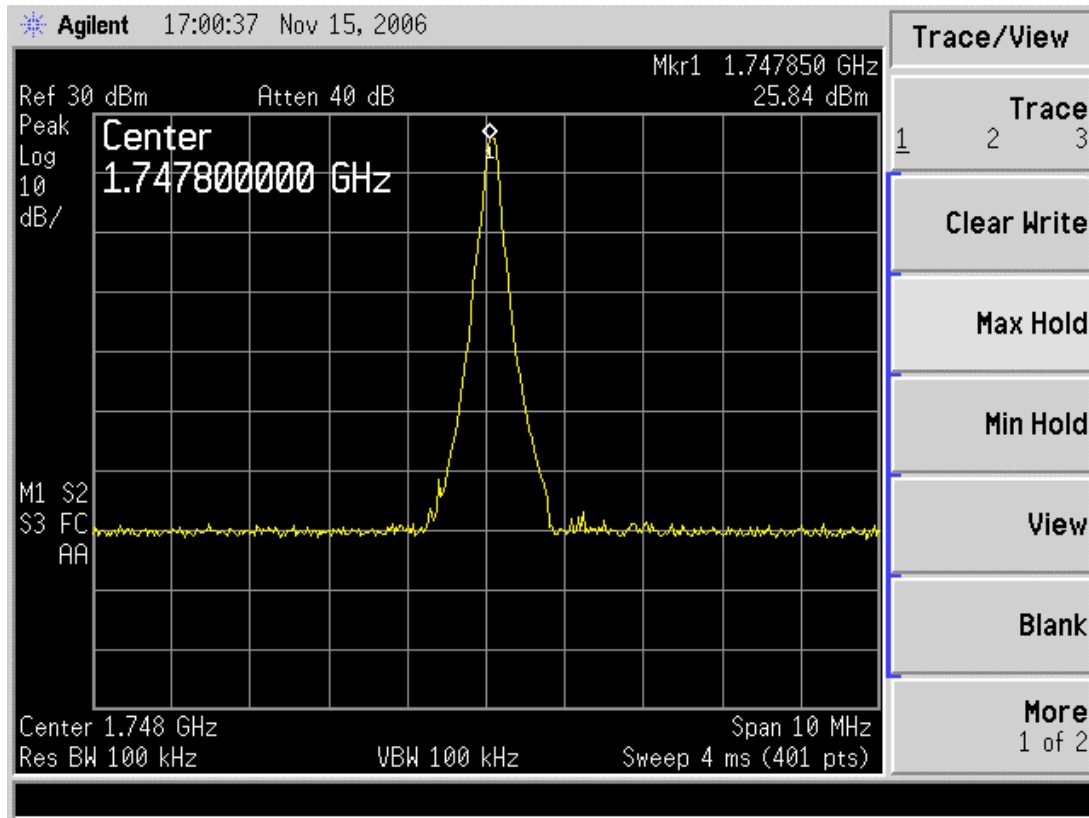
GSM.RG2



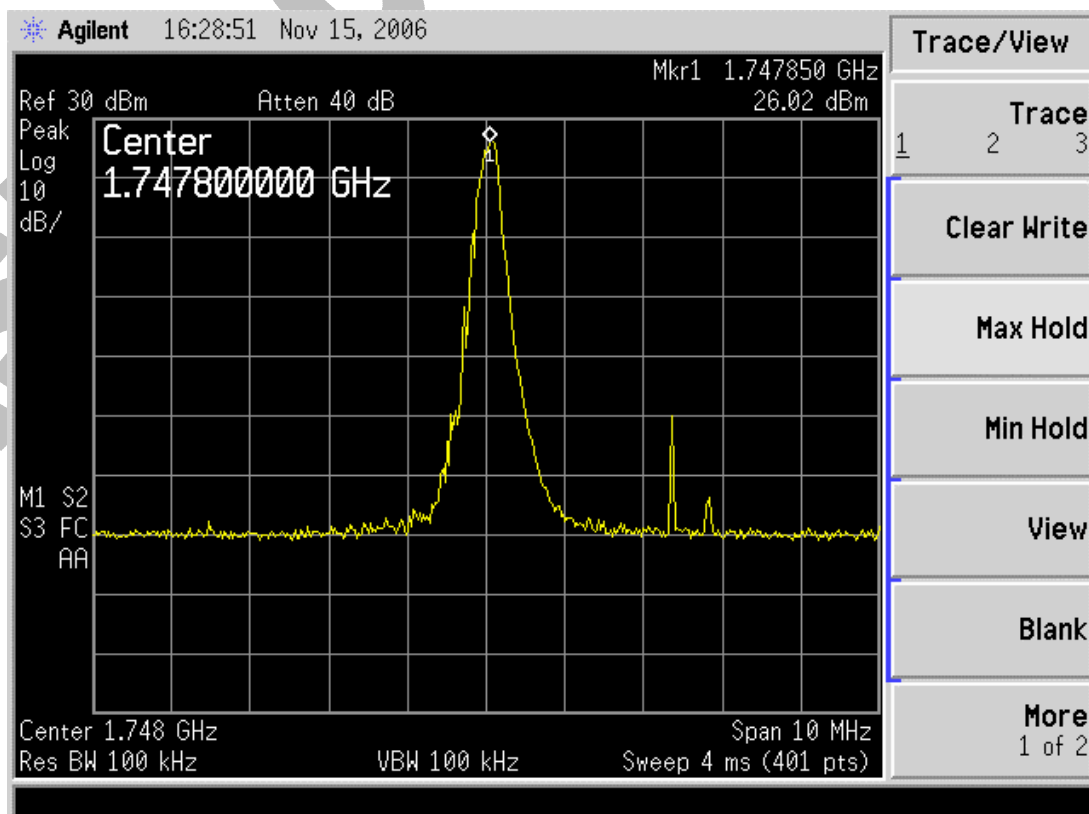
13.2 DCS1800

Due to the spec of probe is not exactly the same please use the “working sample” for signal reference.

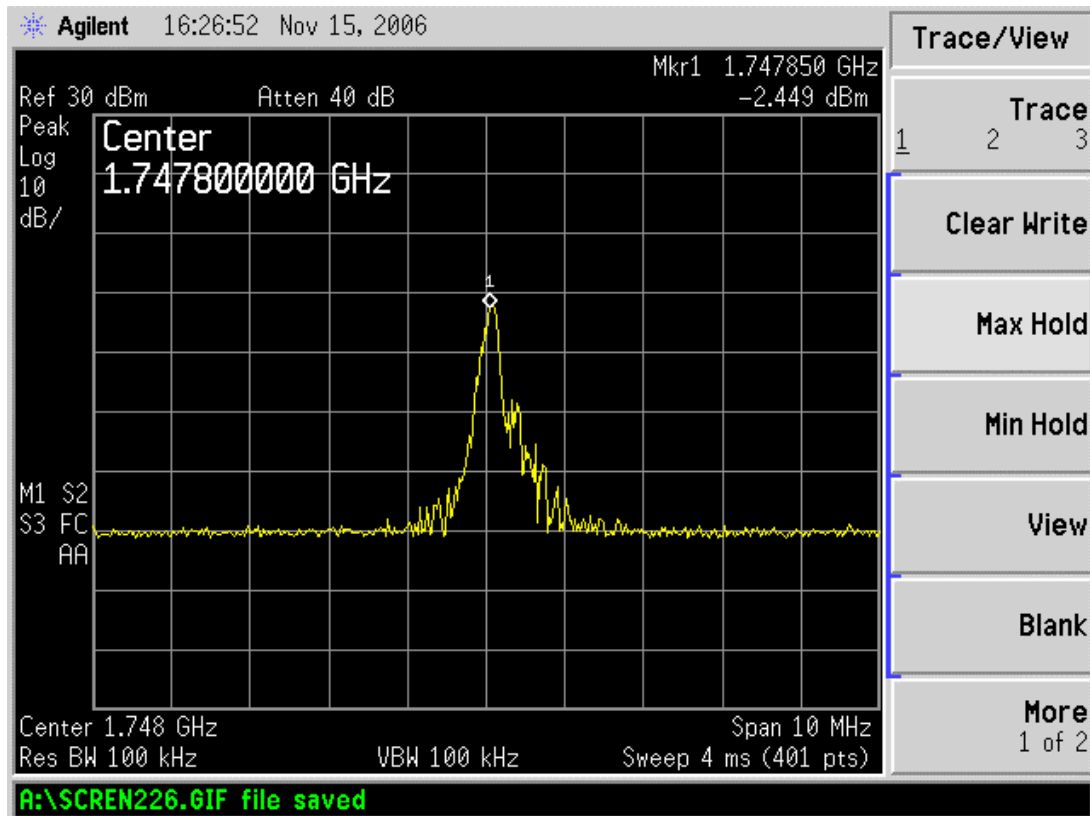
GSM.ANT1



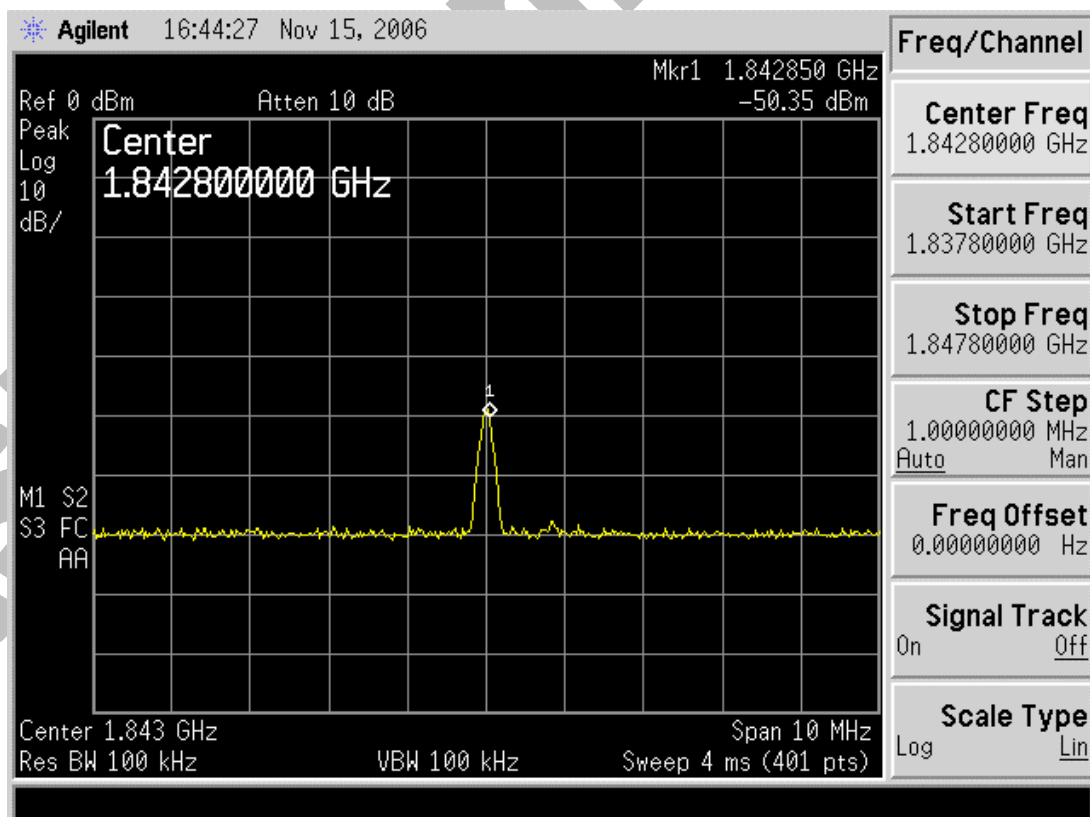
GSM.ANT2 & GSM.TH1



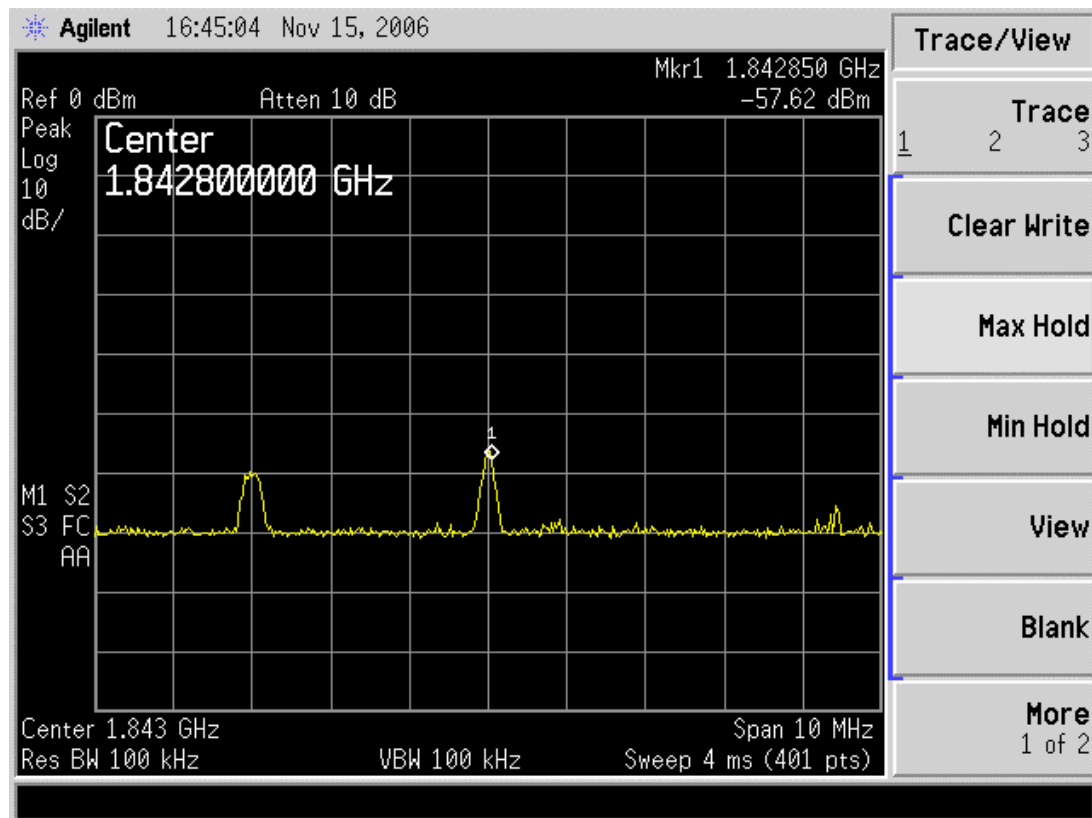
GSM.TH2 & GSM.TH3



GSM.RD1



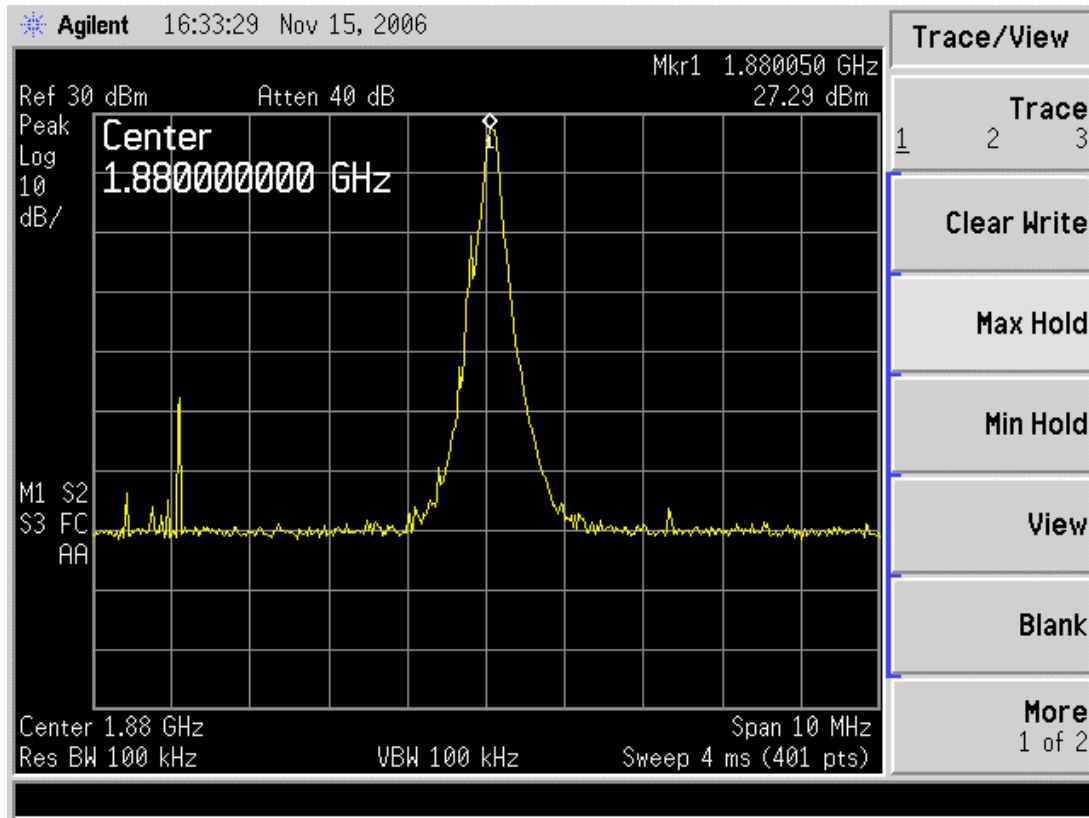
GSM.RD2



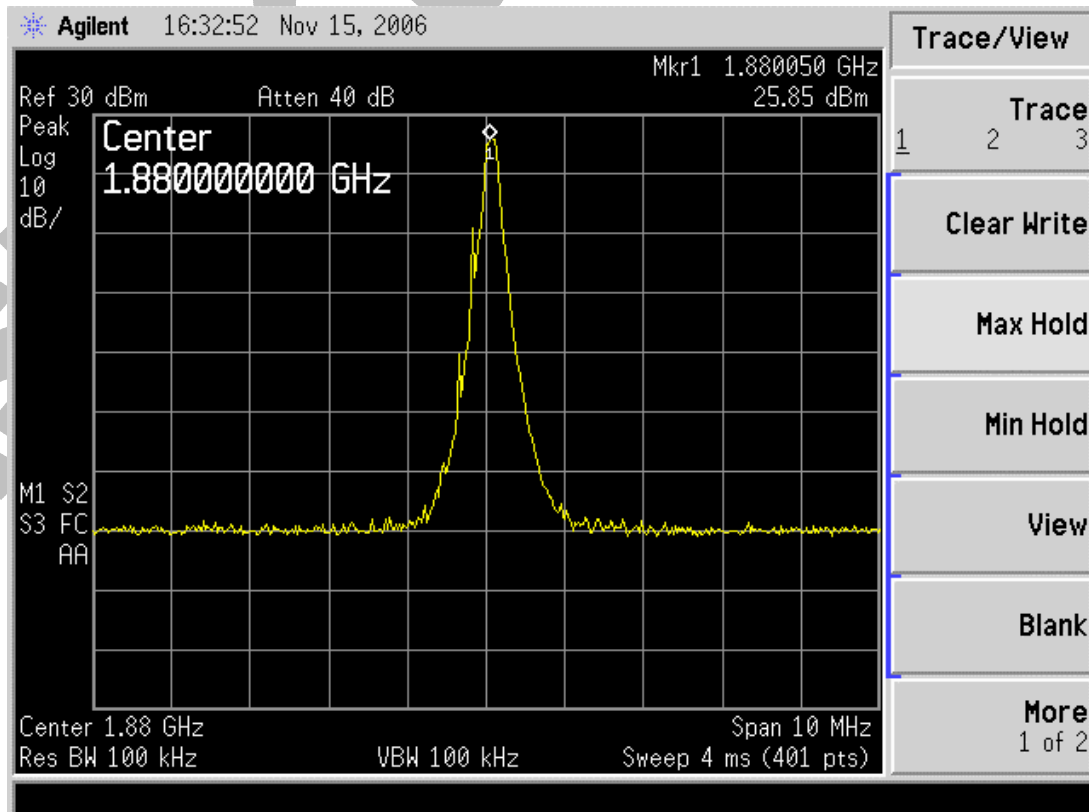
13.3 PCS1900

Due to the spec of probe is not exactly the same please use the “working sample” for signal reference.

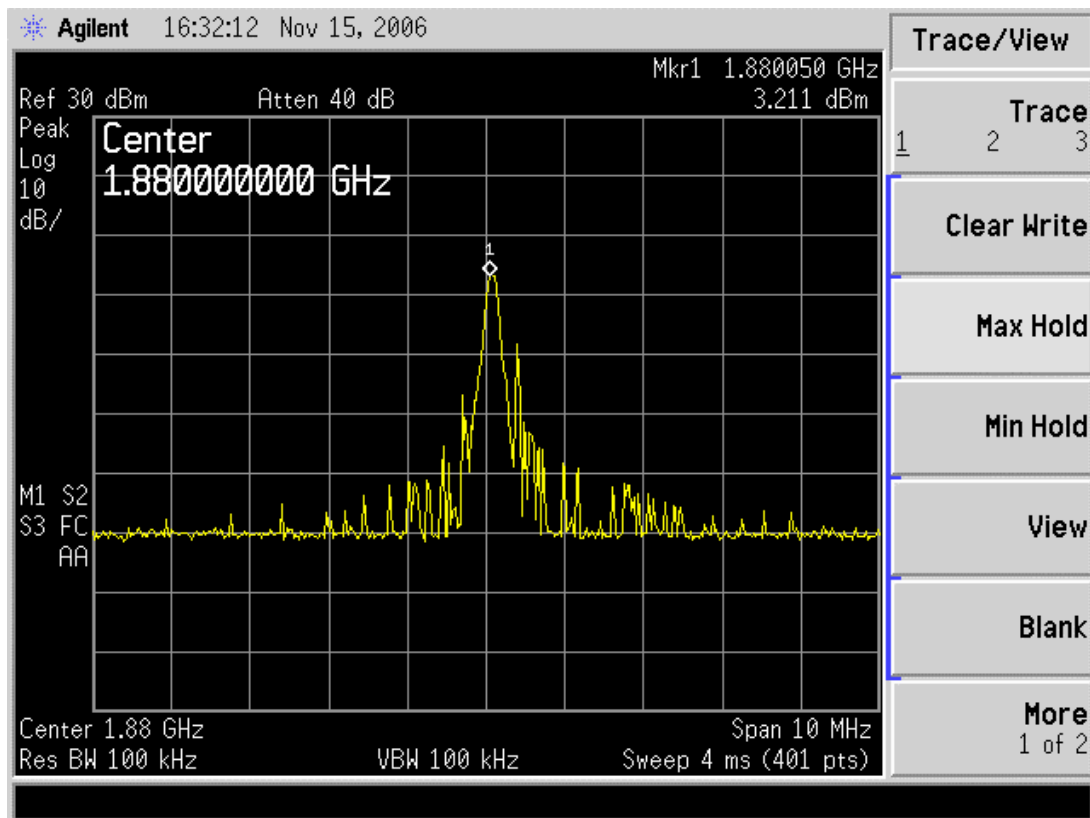
GSM.ANT1



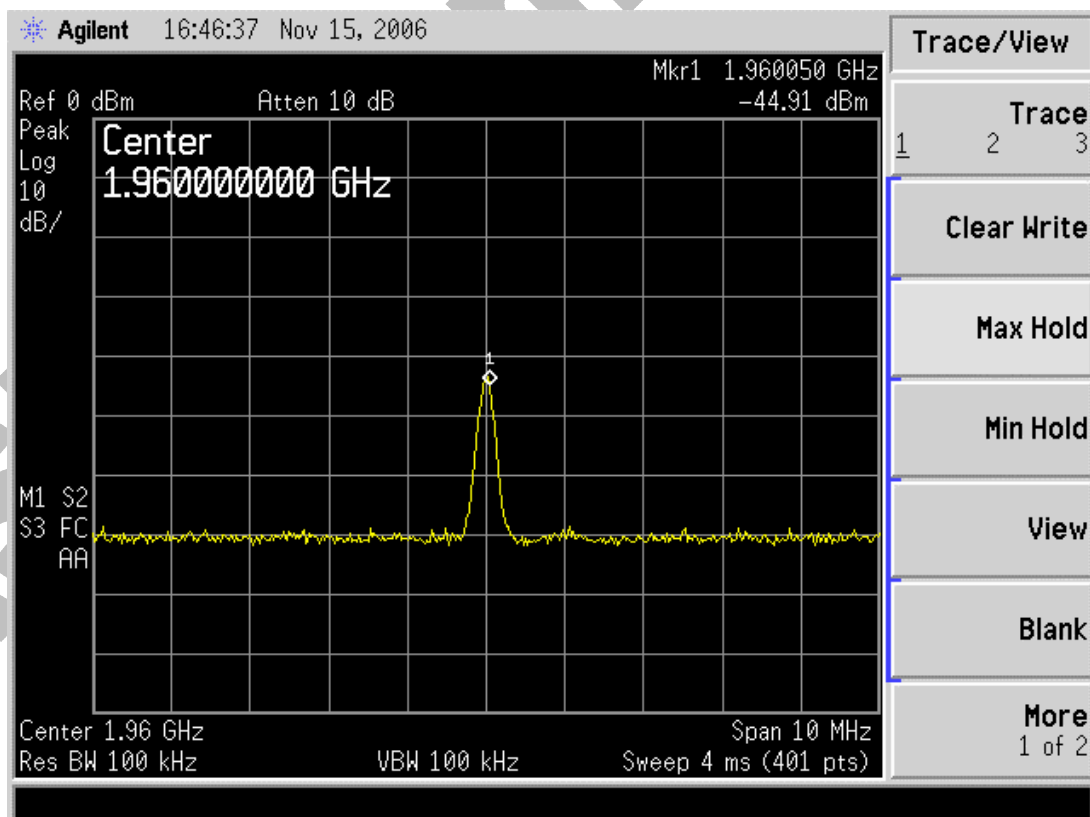
GSM.ANT2 & GSM.TH1



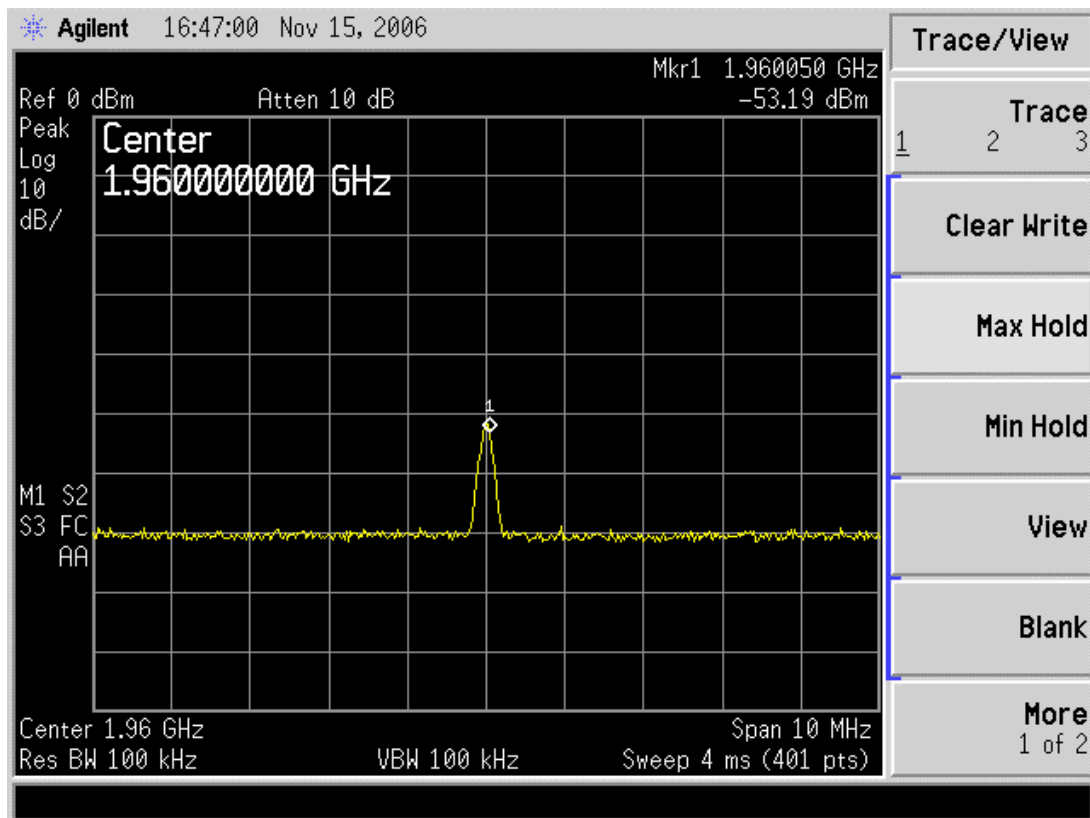
GSM.TH2 & GSM.TH3



GSM.RP1



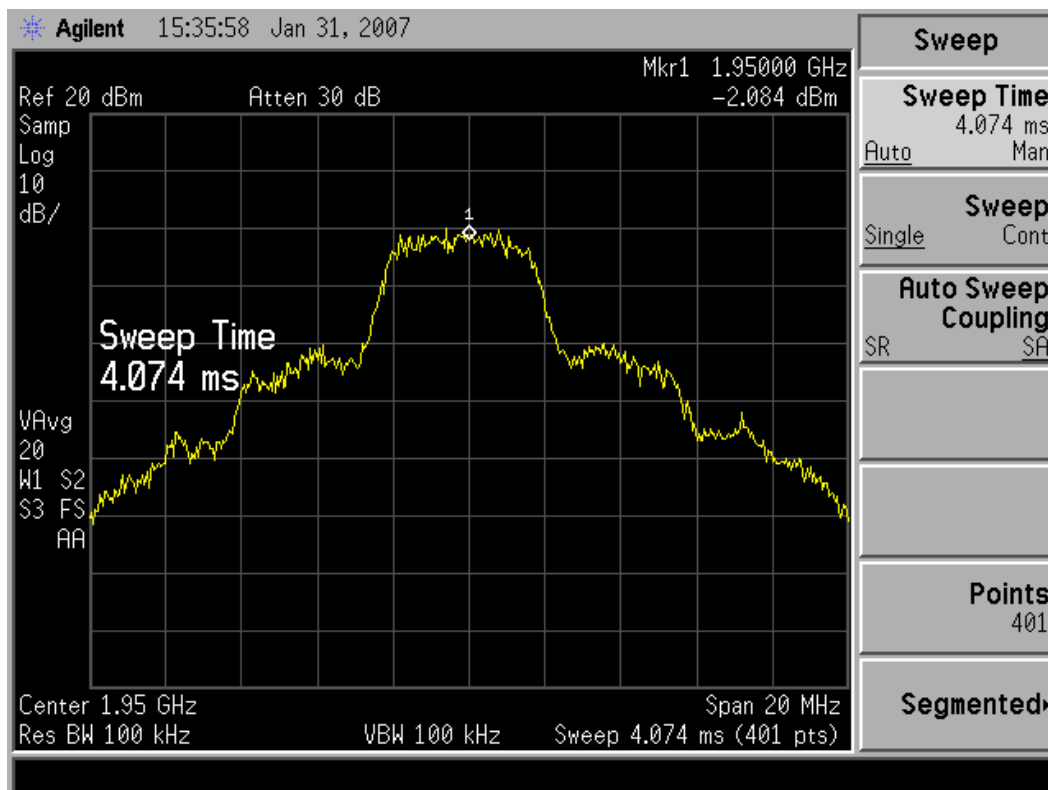
GSM.RP2



13. 4 WCDMA

Due to the spec of probe is not exactly the same please use the “working sample” for signal reference.

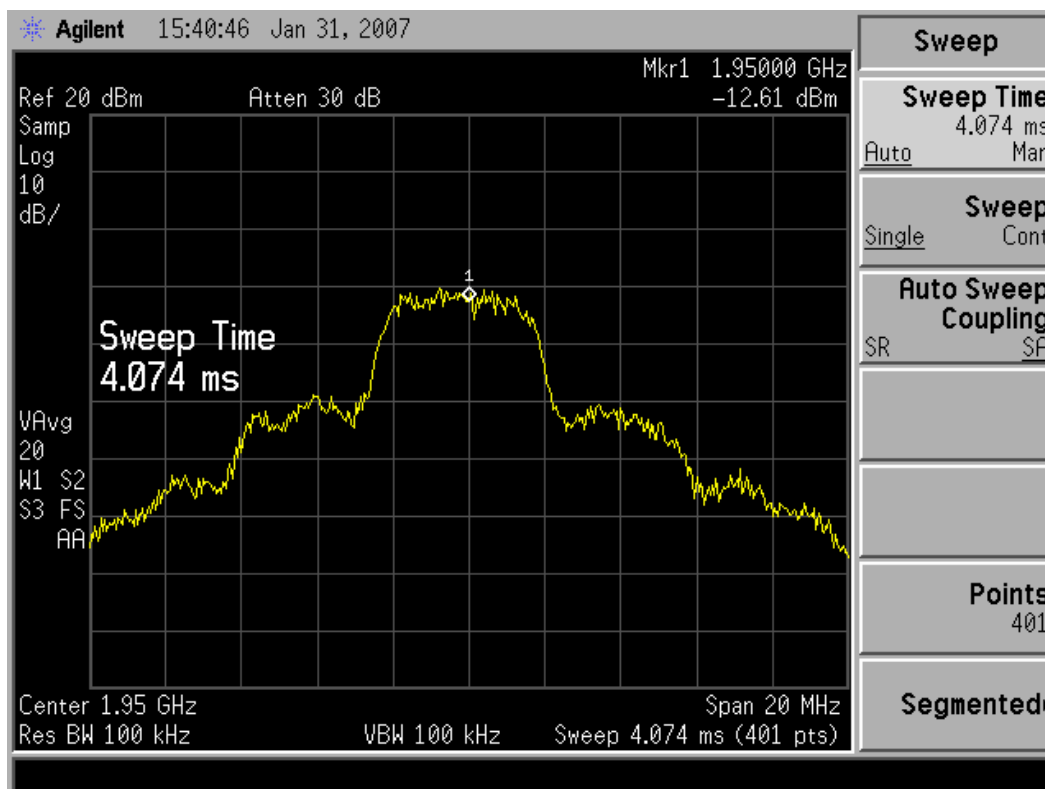
WCDMA.ANT1



WCDMA.ANT2 (Tx)



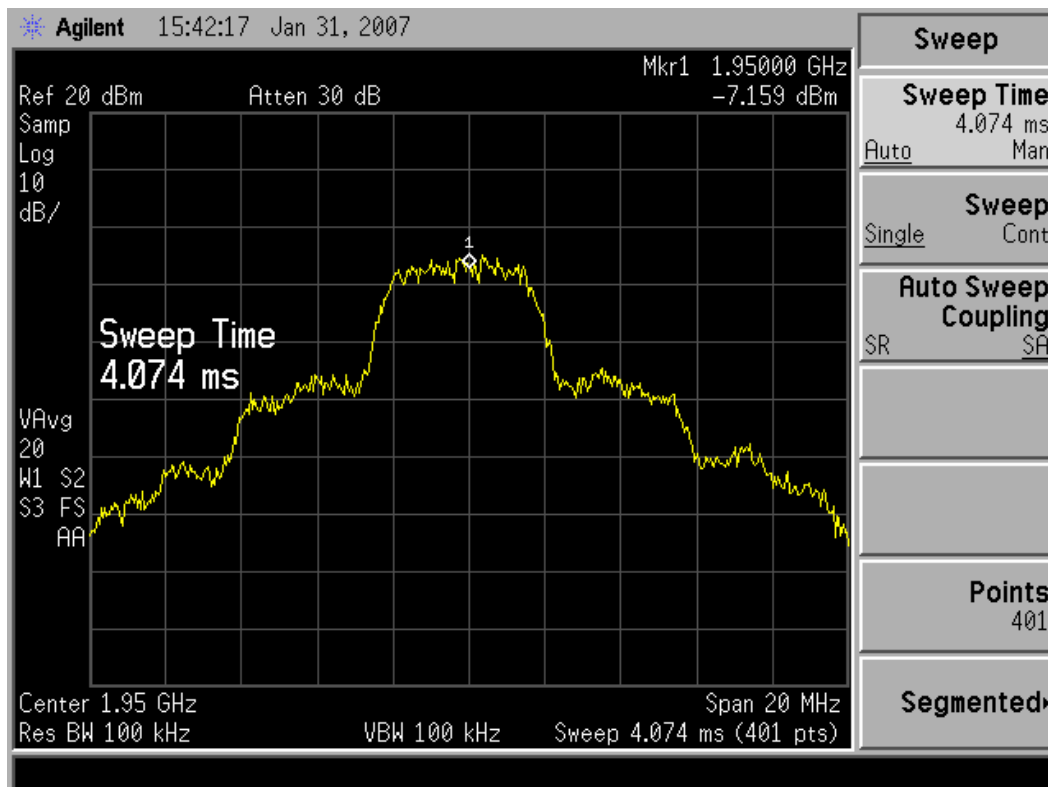
WCDMA.T1



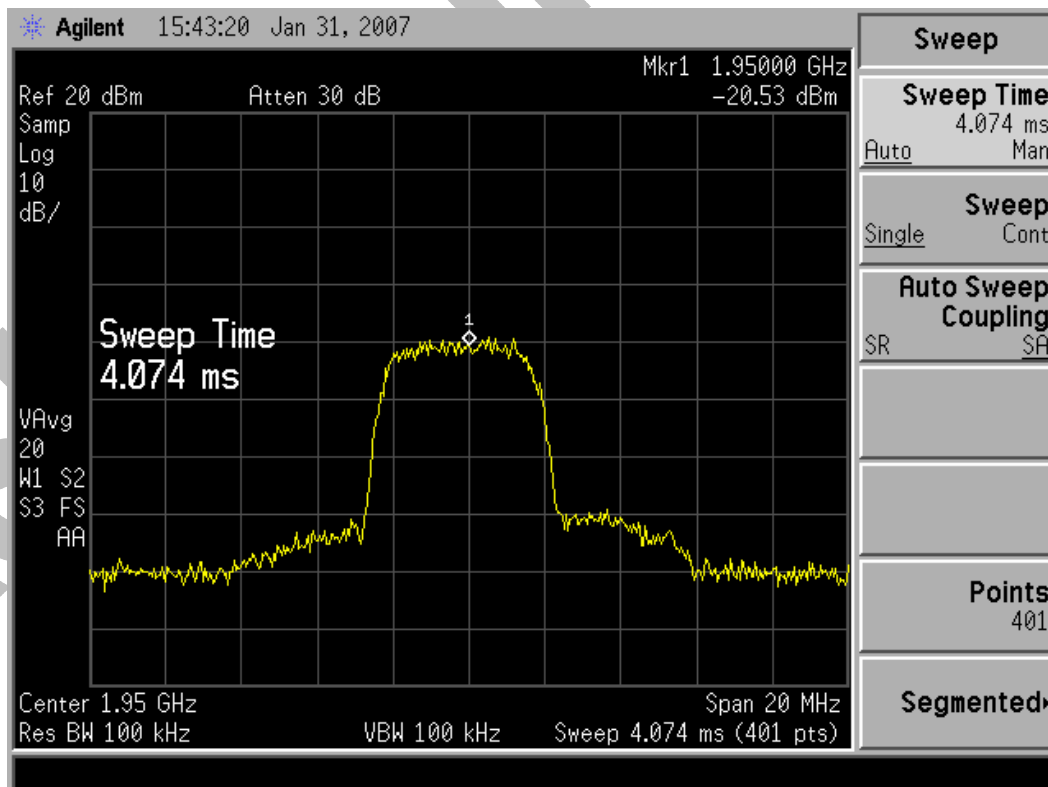
WCDMA.T2



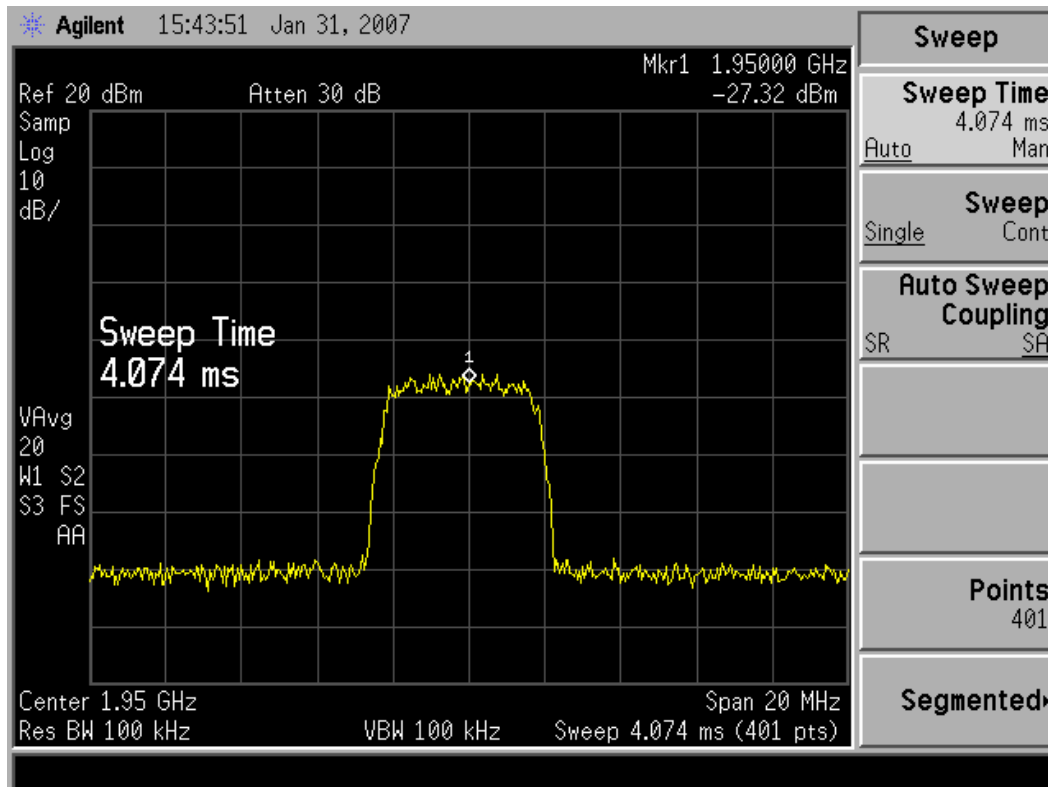
WCDMA.T3



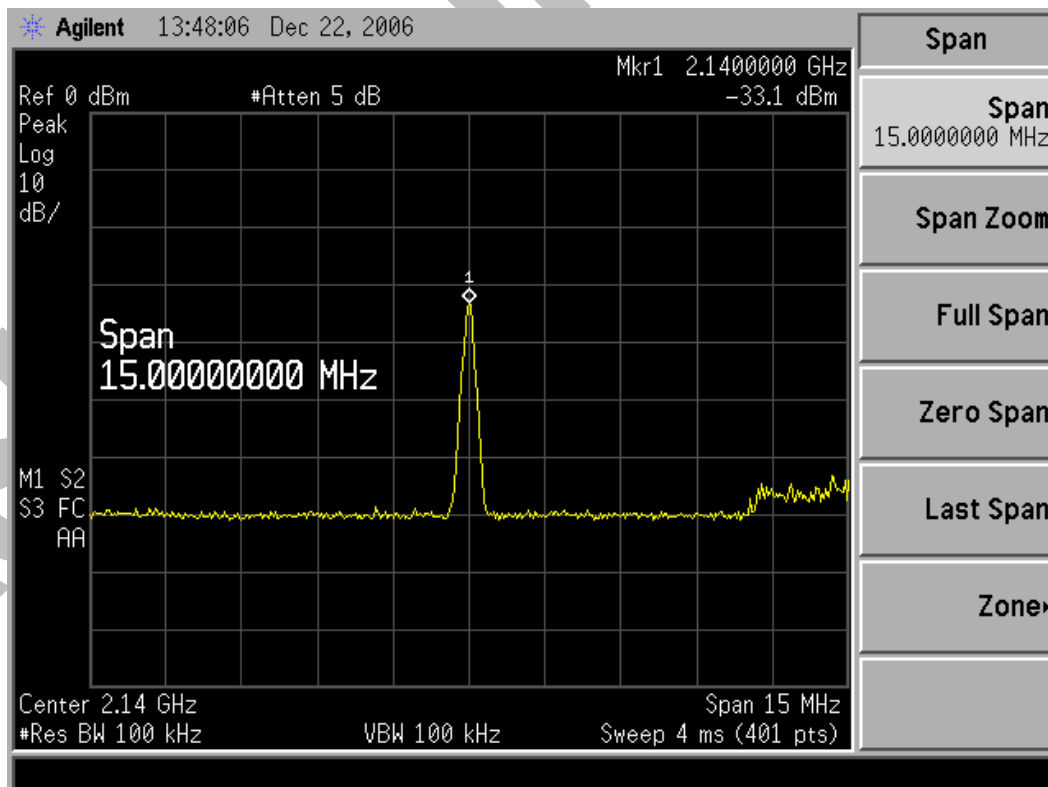
WCDMA.T4



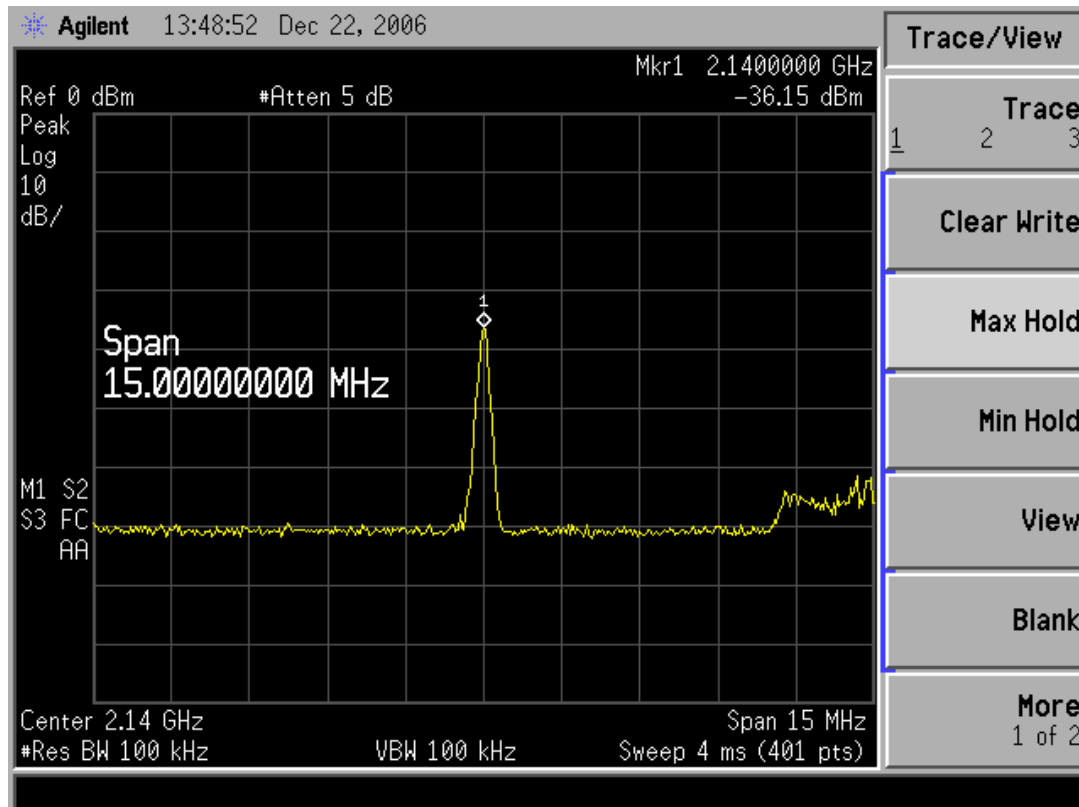
WCDMA.T5



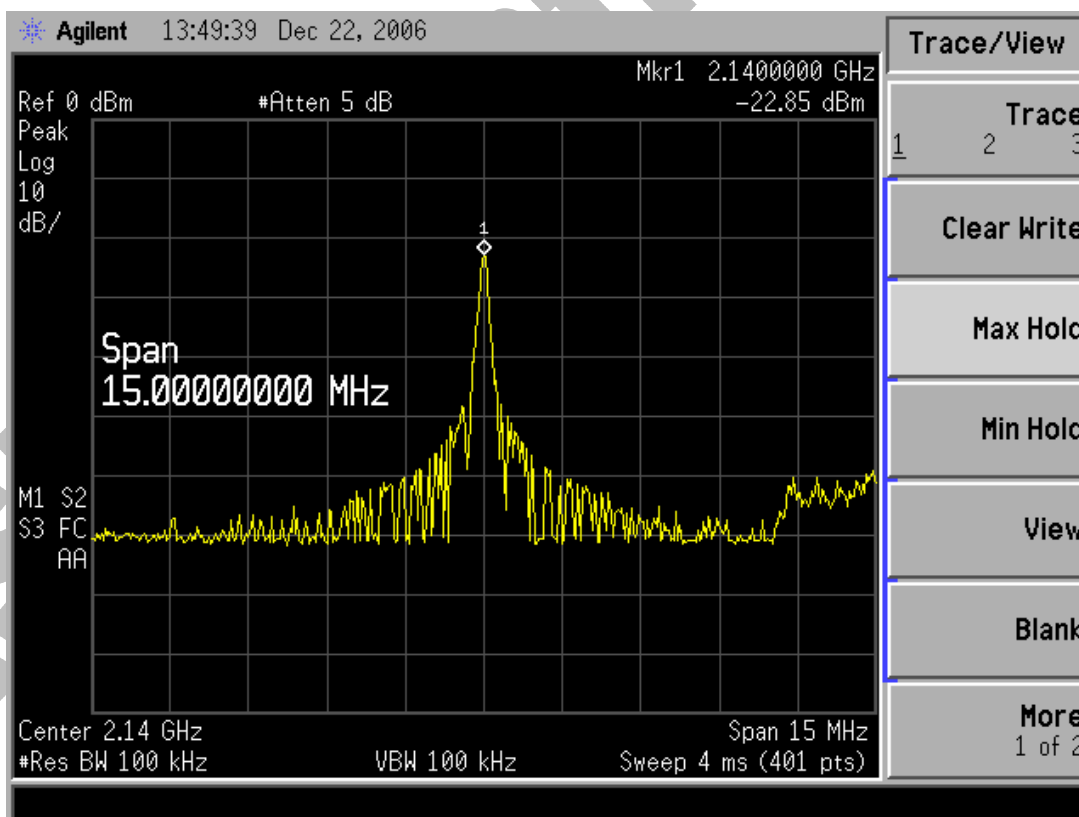
WCDMA.ANT2 (Rx)



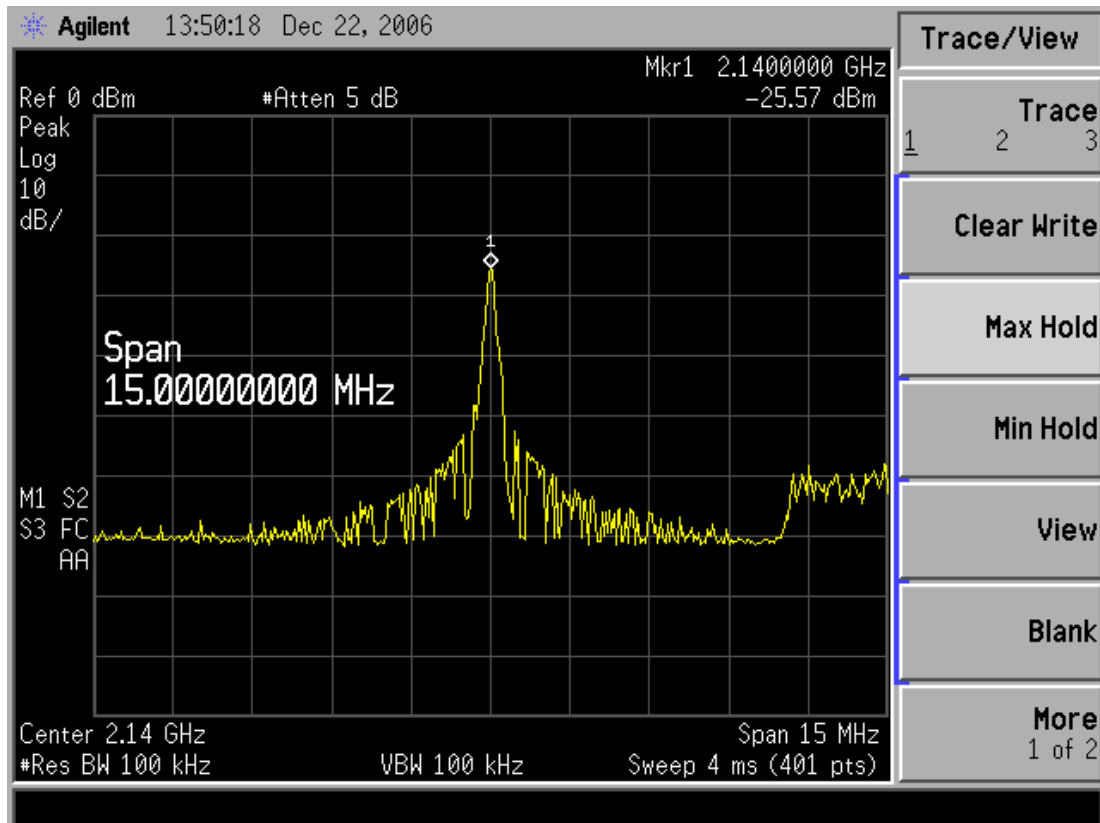
WCDMA.R1



WCDMA.R2



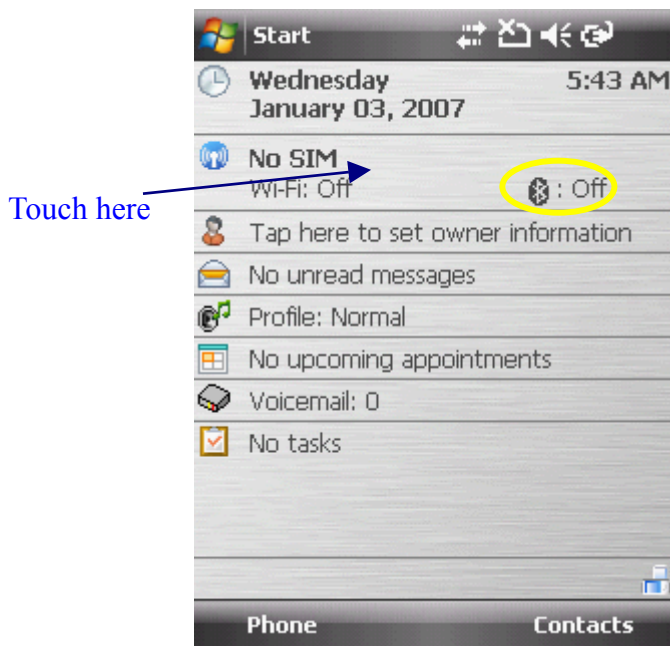
WCDMA.R3



14. Blue tooth

Turn on the phone, make sure if BT can be enable.

(1) Confirm if BT is enabled or not

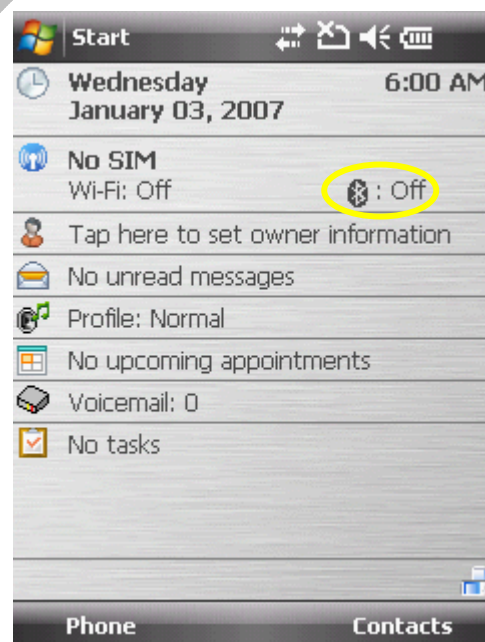


BT Disable



BT Enable and blue led flashed

(2) Turn off Blue tooth functionality :



(3) BT test tool



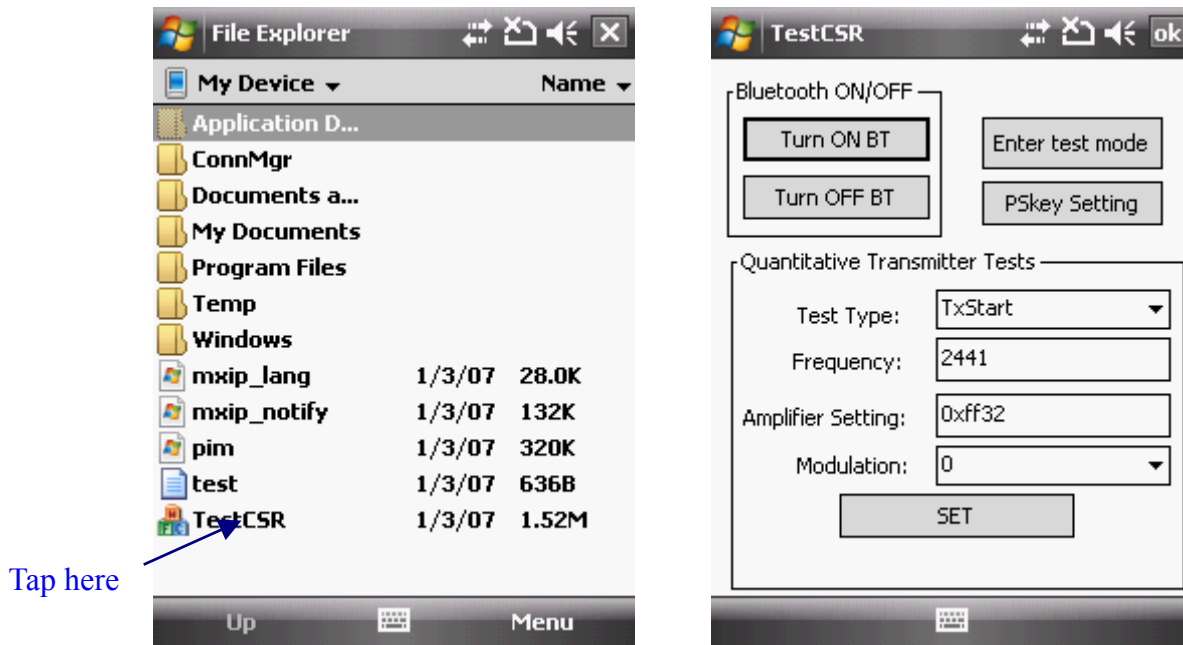
TestCSR.exe



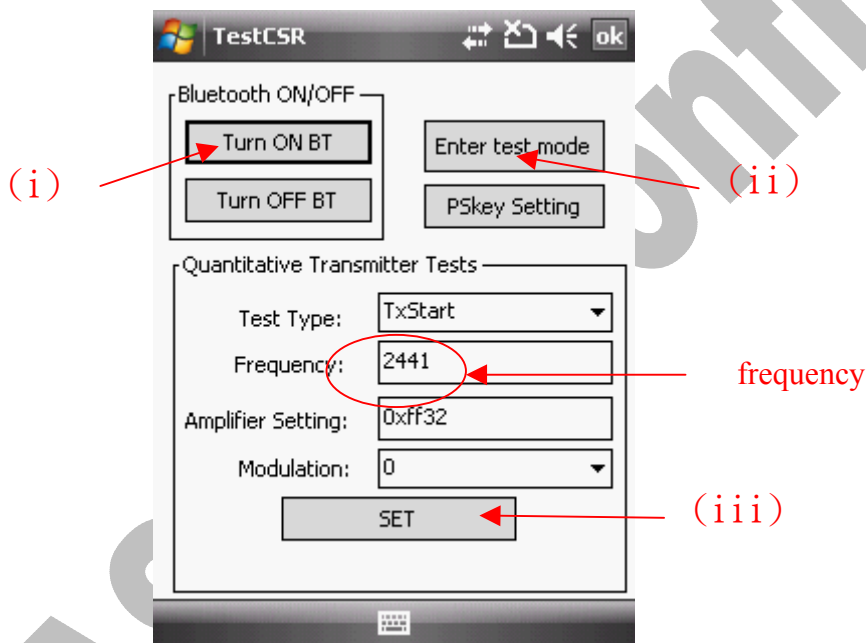
test.TXT

Put these two files above into PDA's main directory (my device\)

(4) Start BT test mode



(5) Showing as the following menu. *



(i) First, **turn on BT** .

(ii) Enter test mode : This option is used only for Anritsu885X series equipment .

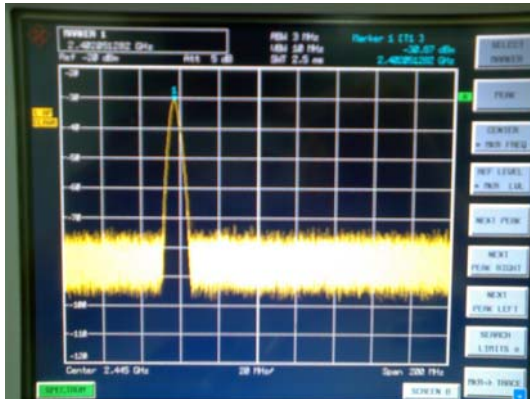
(iii) Choose a frequency,press SETto start TX power

E.X. Frequency 2402 : BT generate TX Power at2402MHz .

Frequency 2441 : BT generate TX Power at2441MHz .

Frequency 2480 : BT generate TX Power at2480MHz

(6) Choose one frequency and measure power



(7) Measuring wireless performance via BT test program first. You may need to put the phone on shielding box or TEM cell to insure no other interference. By comparing the golden sample's normal output value, you can judge the functionality of BT. Apparently, the wireless performance will differ within $\pm 2\text{dBm}$. If the deviation of DUT is beyond the normal value, go straight for next step.

* The testing position should be the same with golden sample to reduce testing uncertainty.

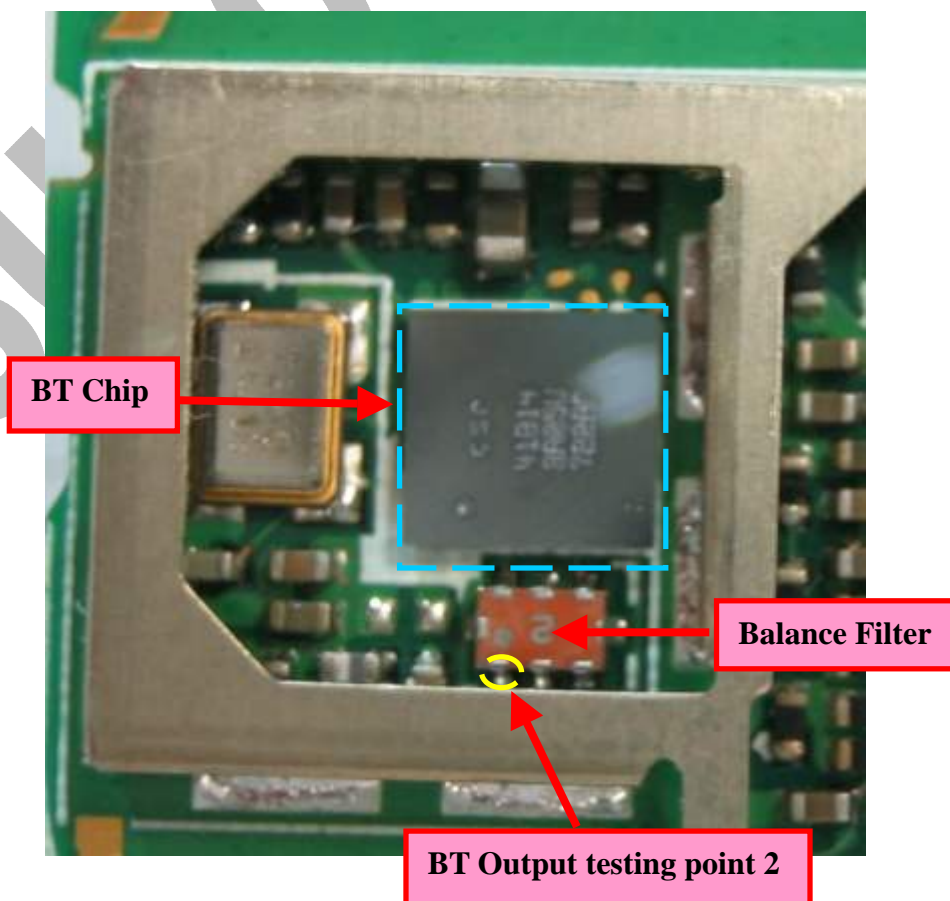
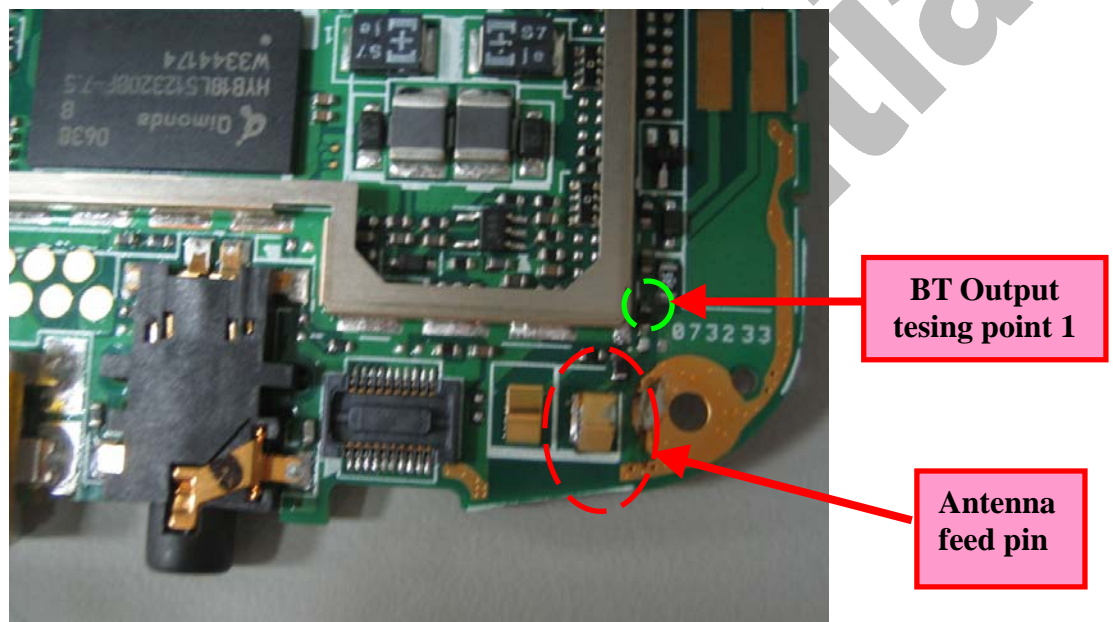
8



BT Antenna in Bottom side

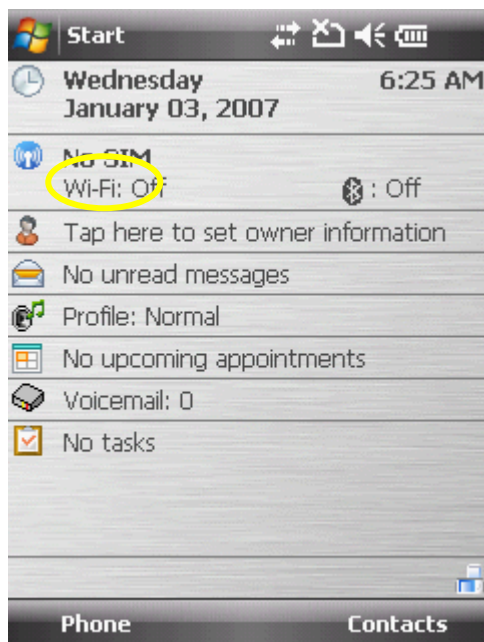
(8) BT position and testing point.

- i. Make sure the RF probe is contact the resistor, BT output testing point1, (green circle) properly, the output power will between **-5 ~ +3 dBm** normally.
- ii. Next, measuring the BT output testing point2 (yellow circle) via RF probe, the output power will between **-5 ~ +3 dBm** normally.
- iii. If the output power still be abnormal, change the balance filter and go back to step ii. (You should notice that the balance filter has its own orientation, so change it carefully.)
- iv. Afterwards, the BT output power still be abnormal, change the BT chip.

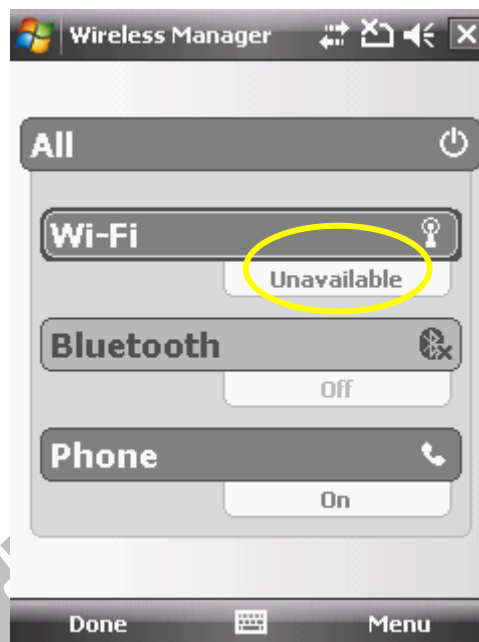


15. WIFI

- (1) Turn on the phone, make sure if WIFI can be enable °



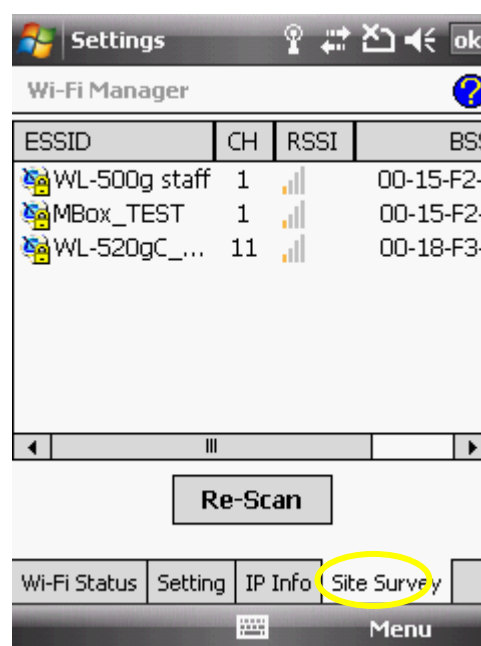
WIFI Disable



WIFI Enable

- (2) Searching AP :

Start→Settings→Connections→Wi-Fi manager



(3)WIFI test mode

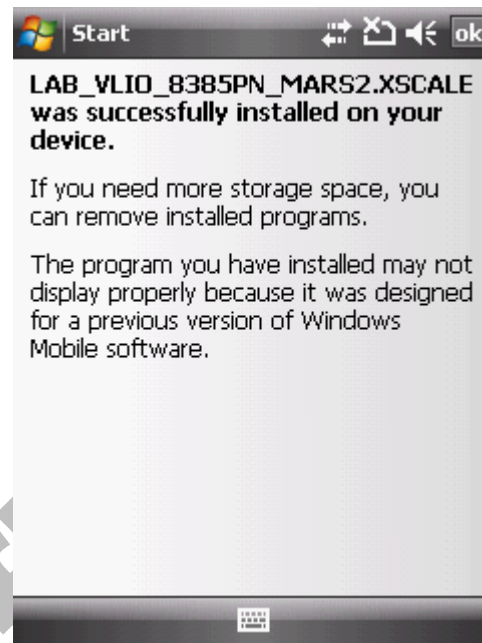
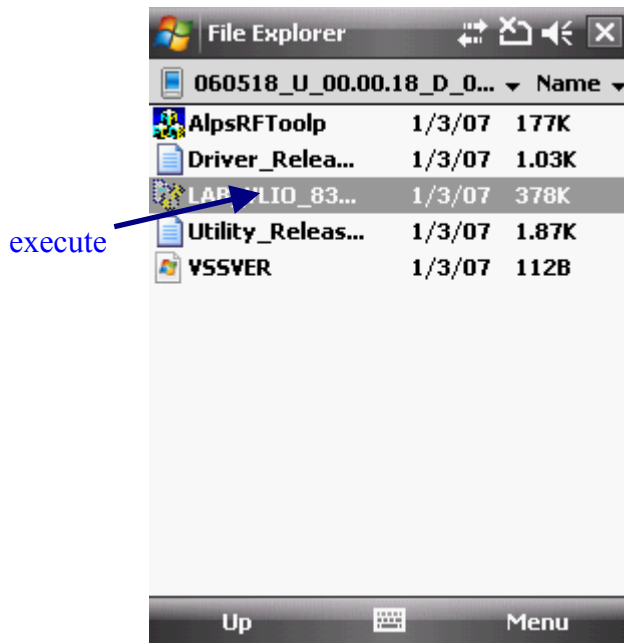


060518_u_00.00.18_d_0.05.01.05.zip

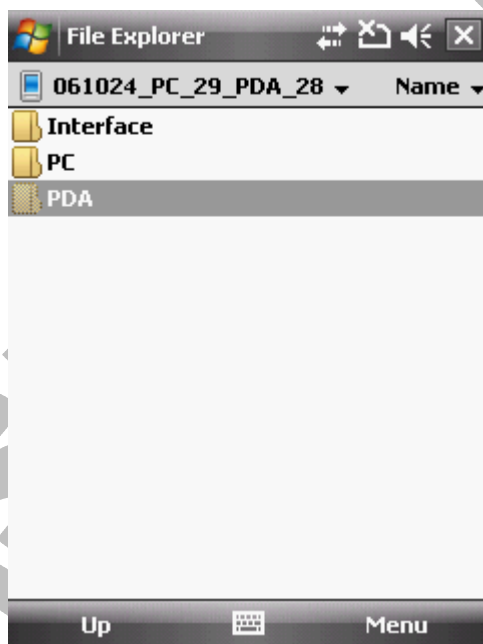


061024_pc_29_pda_28.zip

Unzip the above two files and put into PDA



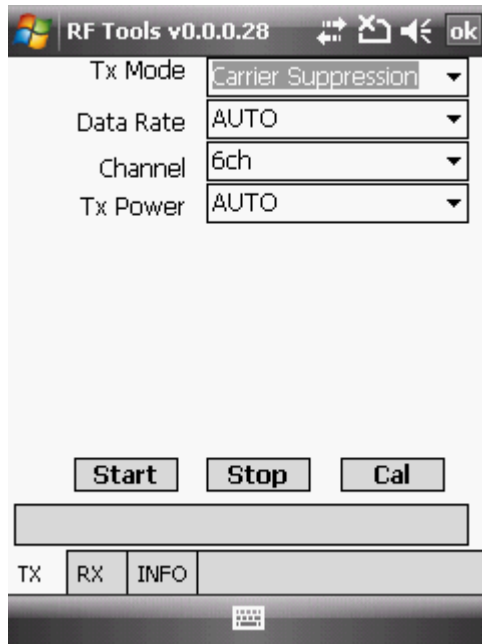
Restart after installation



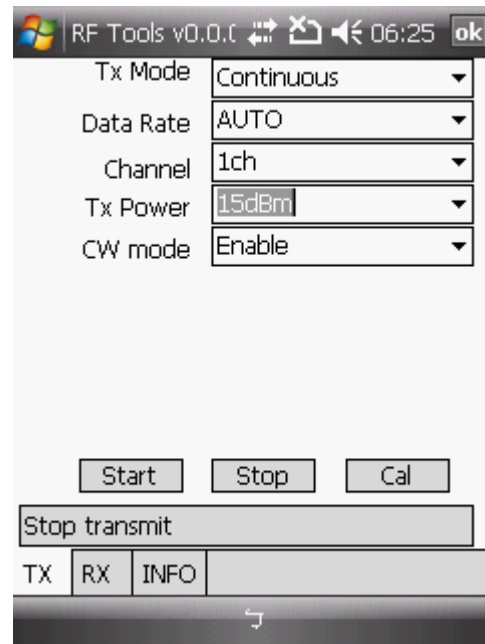
Go to another folder



Tap AlpsRFToolp

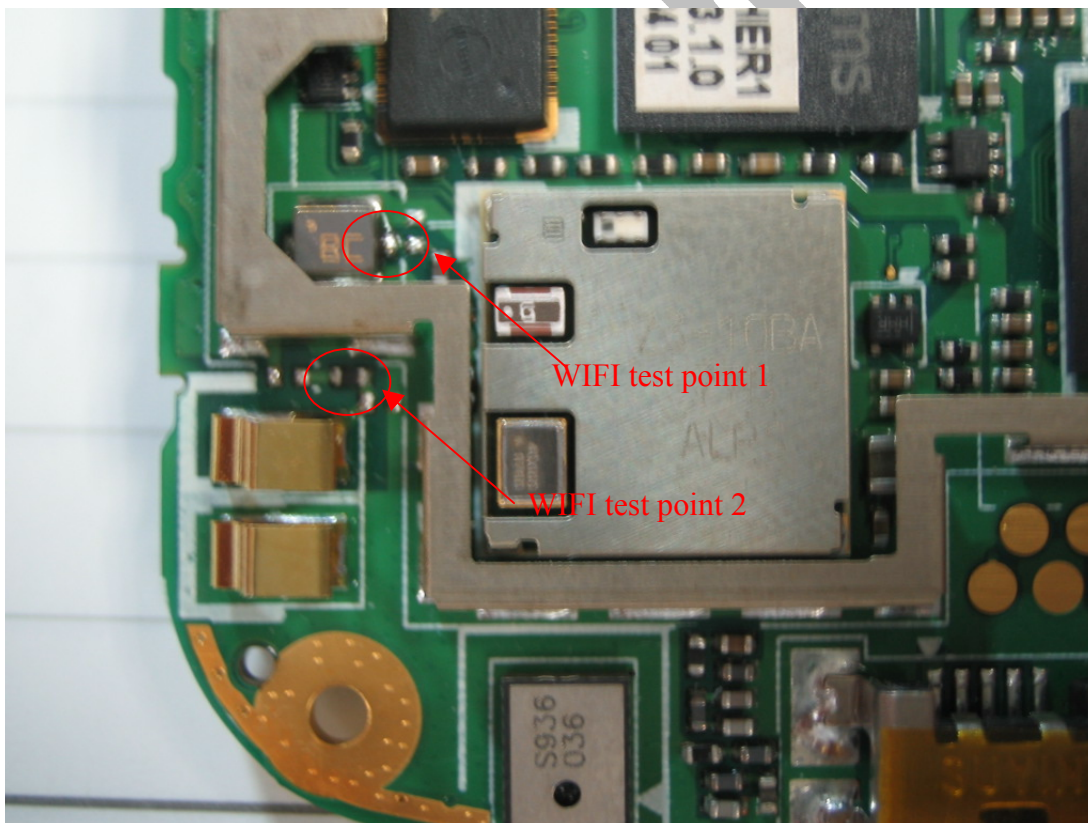


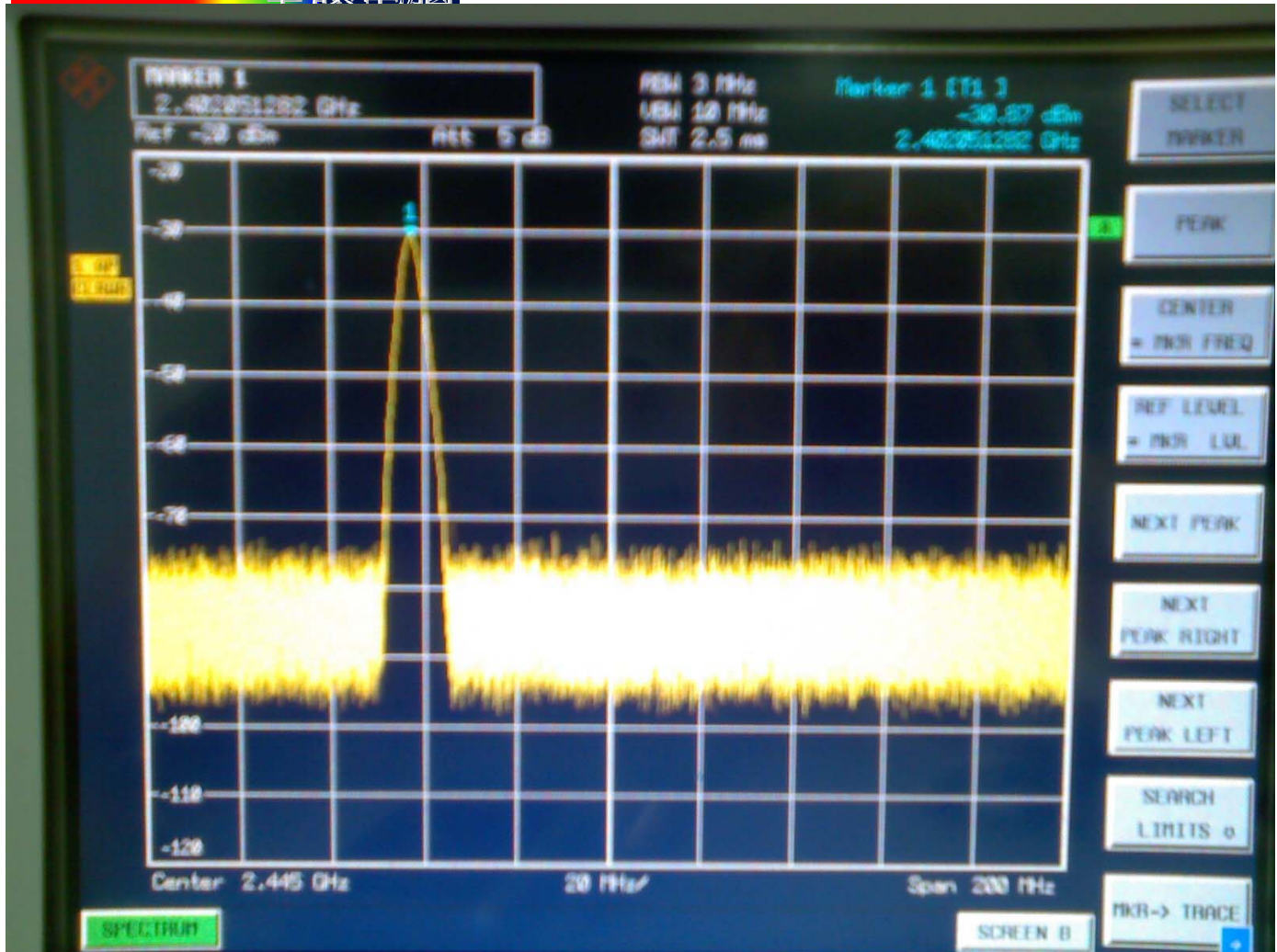
The main menu is as above.



Settings are as above, you can choose different channels then press start to transmit power.

(4) Measure output power at test points





Measure at test point1 typical power is about 13-15dBm.

If the power value is abnormal, change U35.

Measure at test point1 typical power is about 11-13dBm

If the power value is abnormal, change U30.

16. Appendix

16.1 Typical Value of GSM/GPRS Conductive Tx/Rx Test

GSM/GPRS Tx Typical Value					
Band	Channel No.	Frequency. (MHz)	Power Level	Typical Output Power (dBm)	Tolerance (dB)
EGSM900	975	880.2	5	32.5	+/- 1
	62	902.4			
	124	914.8			
DCS1800	512	1710.2	0	29.5	+/- 1
	700	1747.8			
	885	1784.8			
PCS1900	512	1850.2	0	29.5	+/- 1
	661	1880			
	810	1909.8			
GSM/GPRS Rx Typical Value					
Band	Channel No.	Frequency. (MHz)	Sensitivity Level - BER < 2% (dBm) Maximum		
EGSM900	975	925.2	-104		
	62	947.4			
	124	959.8			
DCS1800	512	1805.2	-103		
	700	1842.8			
	885	1879.8			
PCS1900	512	1930.2	-103		
	661	1960			
	810	1989.8			

16.2 Typical Value of WCDMA Conductive Tx/Rx Test

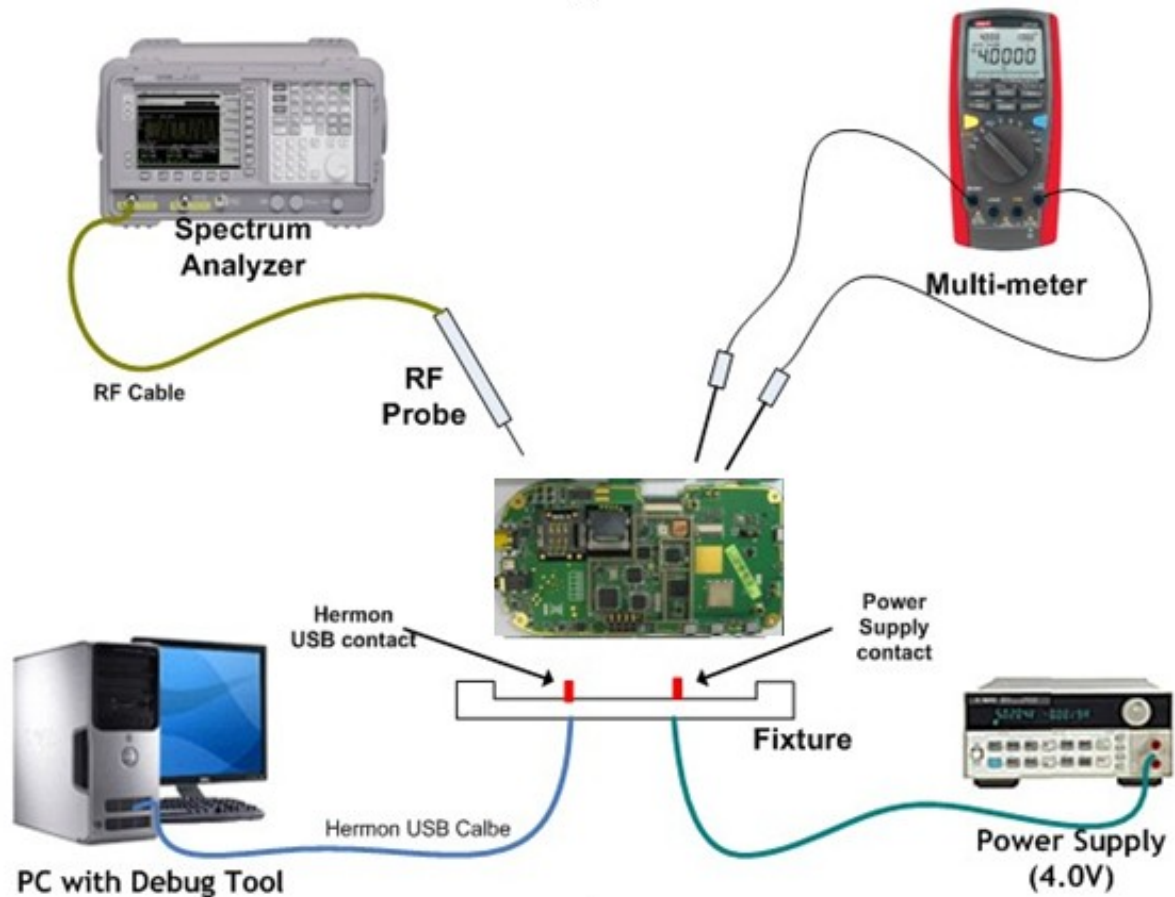
WCDMA Tx Typical Value					
Band	Channel No.	Frequency. (MHz)	Power Level	Typical Output Power (dBm)	Tolerance (dB)
WCDMA Tx	9612	1922.4	Maximum (all up bit)	23.5	+/- 1.5
	9750	1950			
	9888	1977.6			
WCDMA Rx Typical Value					
Band	Channel No.	Frequency. (MHz)	Sensitivity Level - BER < 0.1% (dBm) Maximum		
WCDMA Rx	10562	2112.4	-111		
	10700	2140			
	10838	2167.6			

16.3 Tx Test Environment Setup

Equipments Required :

1. PC
2. Specific Fixture for repair and test, including
 - A. Hermon USB contact
 - B. Power Supply contact
3. RF Probe with DC block and RF cable (30cm)
4. Spectrum Analyzer
5. Digital Multi-meter

Example of Tx Test Environment Setup :

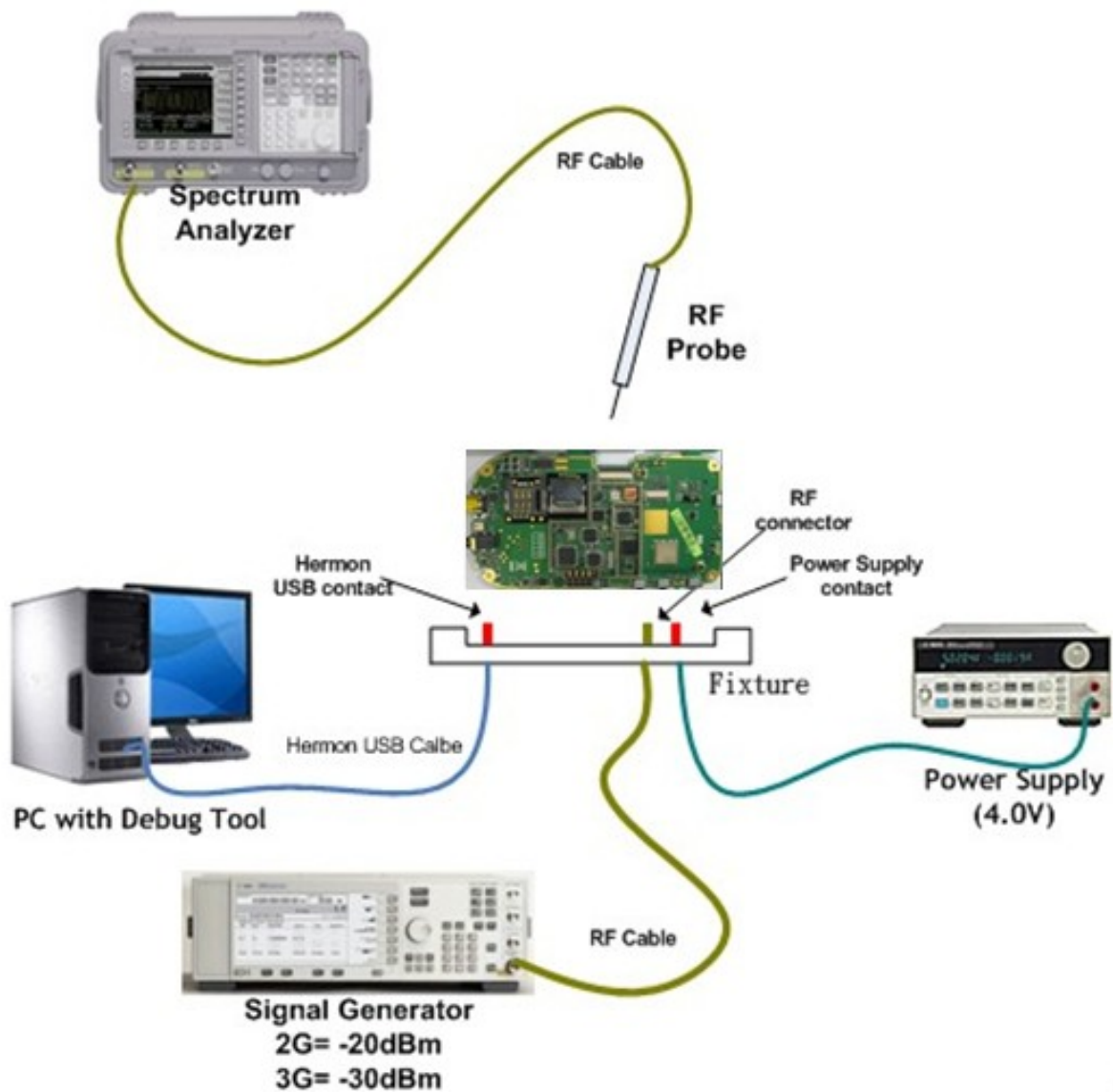


16.4 Rx Test Environment Setup

Equipments Required :

1. PC
2. Specific Fixture for repair and test, including
 - A. Hermon USB contact
 - B. Power Supply contact
 - C. RF connector and RF cable
3. RF Probe with DC block and RF cable (30cm)
4. Signal Generator

Example of Rx Test Environment Setup :



17. GPS Introduce Purpose:

The Service Colleagues would be able to identify the GPS hardware trouble issues of Solaris and then repair the hardware trouble issues soon.

17.1 Equipment requires

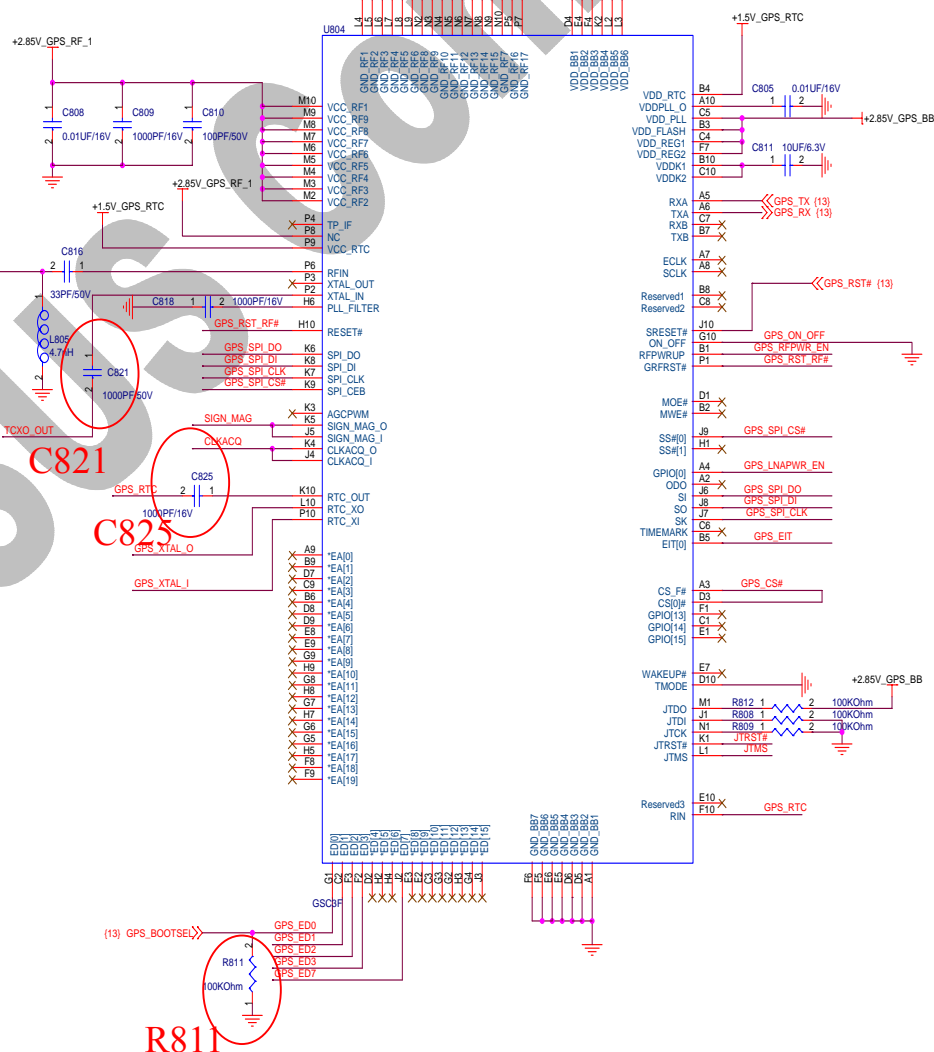
For identifying and repairing the GPS hardware trouble issues of Solaris

17.2 Software:

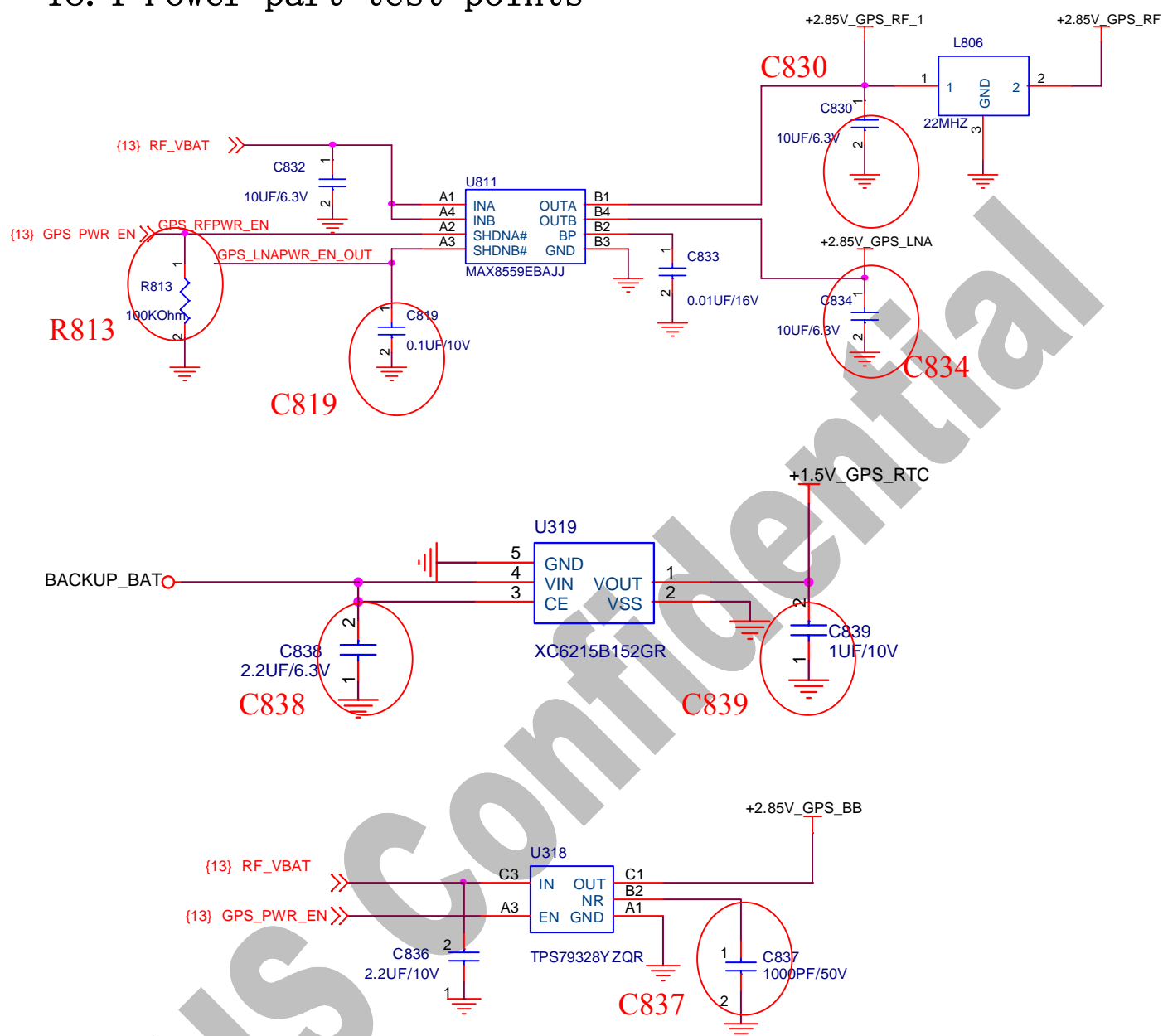
SiRFDemoPPC, GPS Firmware: GSW3.2.4 or GSW Instant fix 3.2.4

17.3 Hardware:

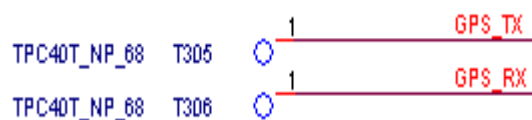
GPS active antenna, Oscilloscope, GPS signal generator, Digital Multimeter



18.4 Power part test points

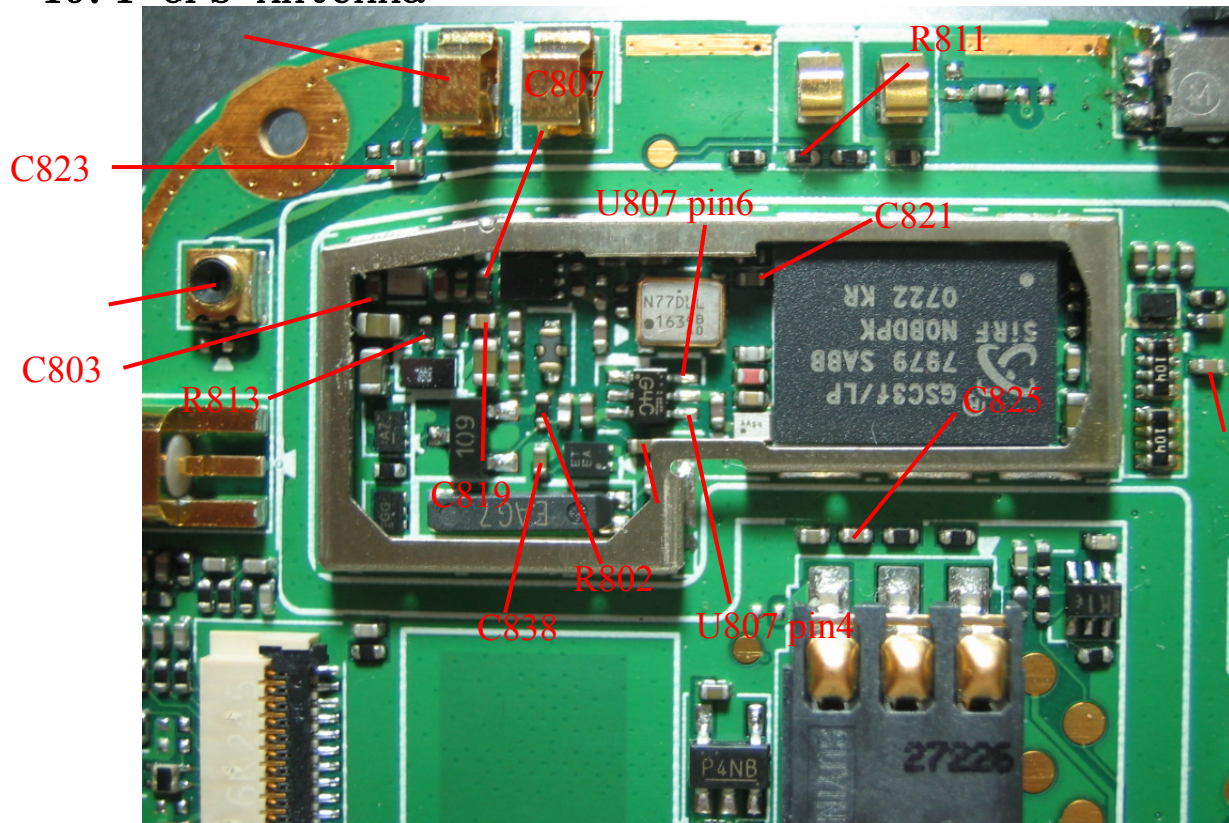


18.5 Testing signal from base band

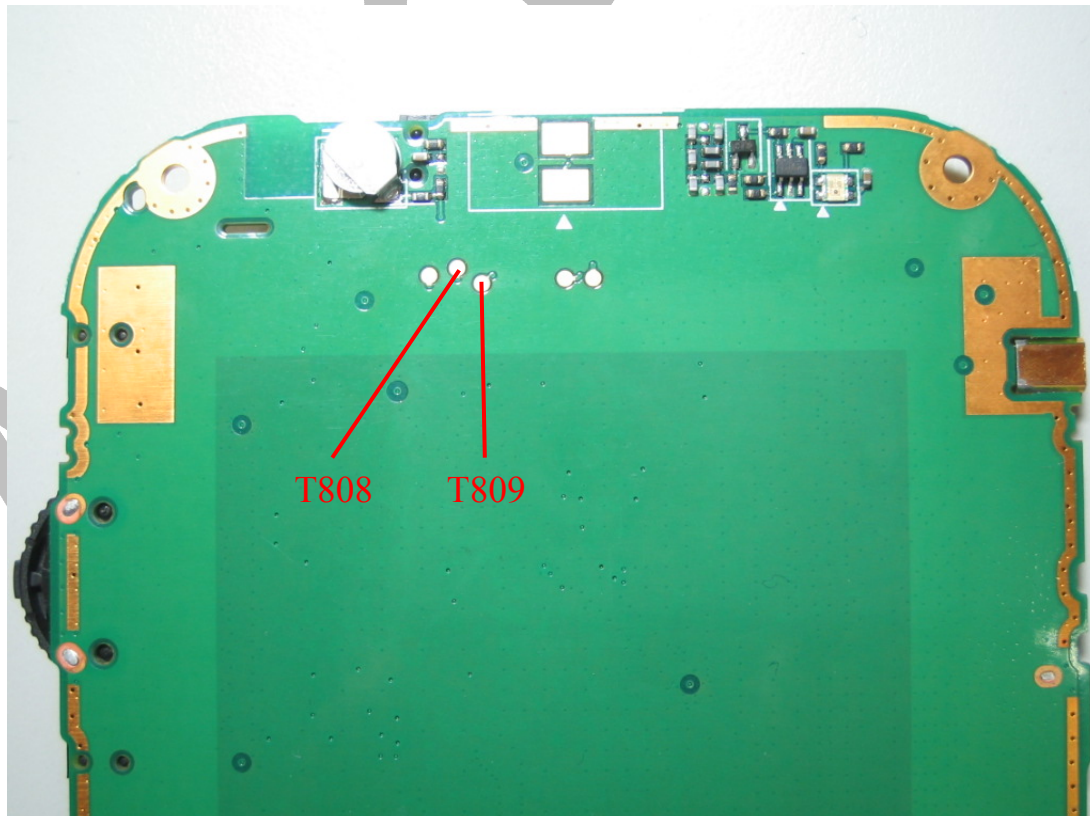


19. Test points placement point

19.1 GPS Antenna



Testing signal from baseband



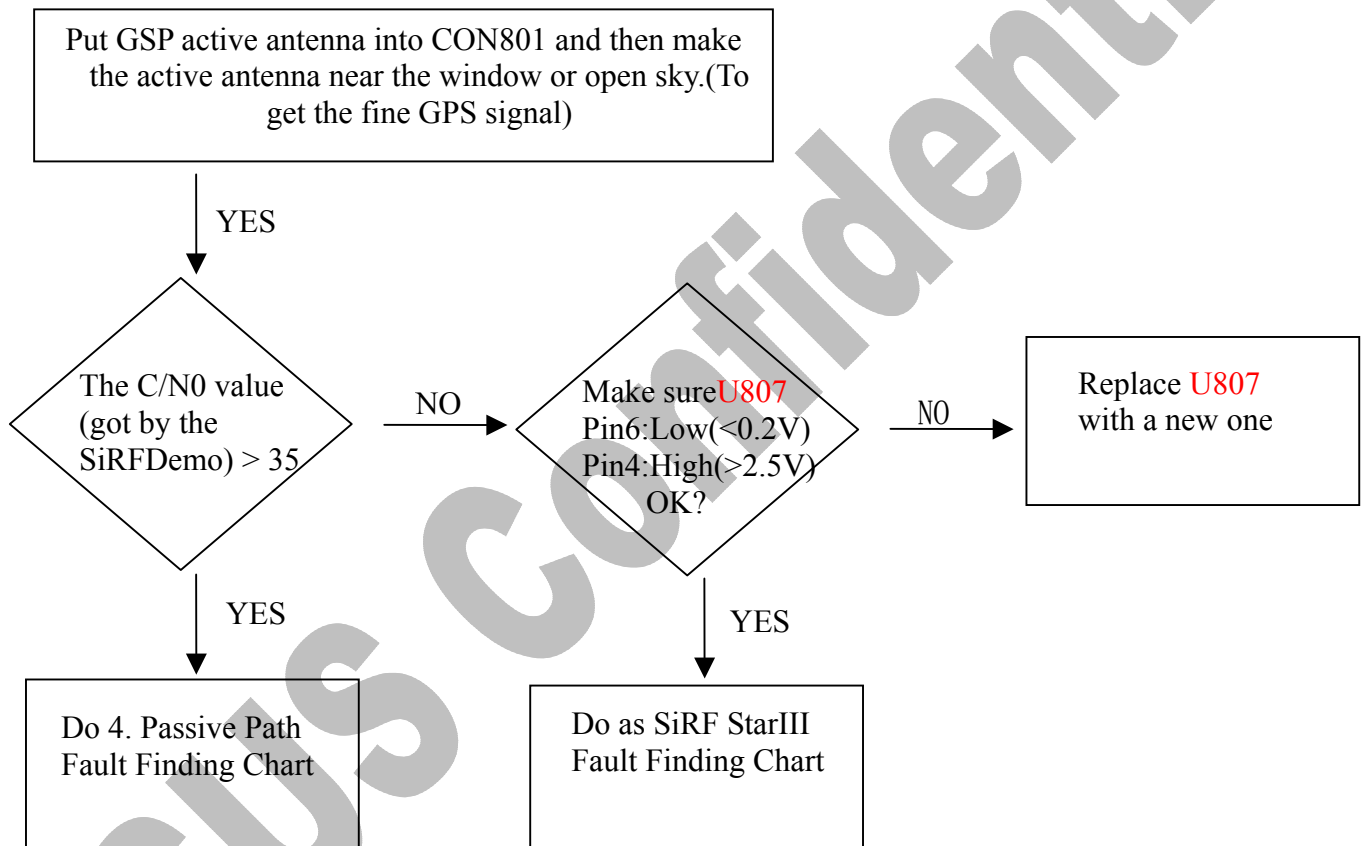
20. GPS Hardware Examination Procedure

The GPS examination procedure includes six parts. In the six parts, SiRFDemo PPC program must be used. (Appendix A)

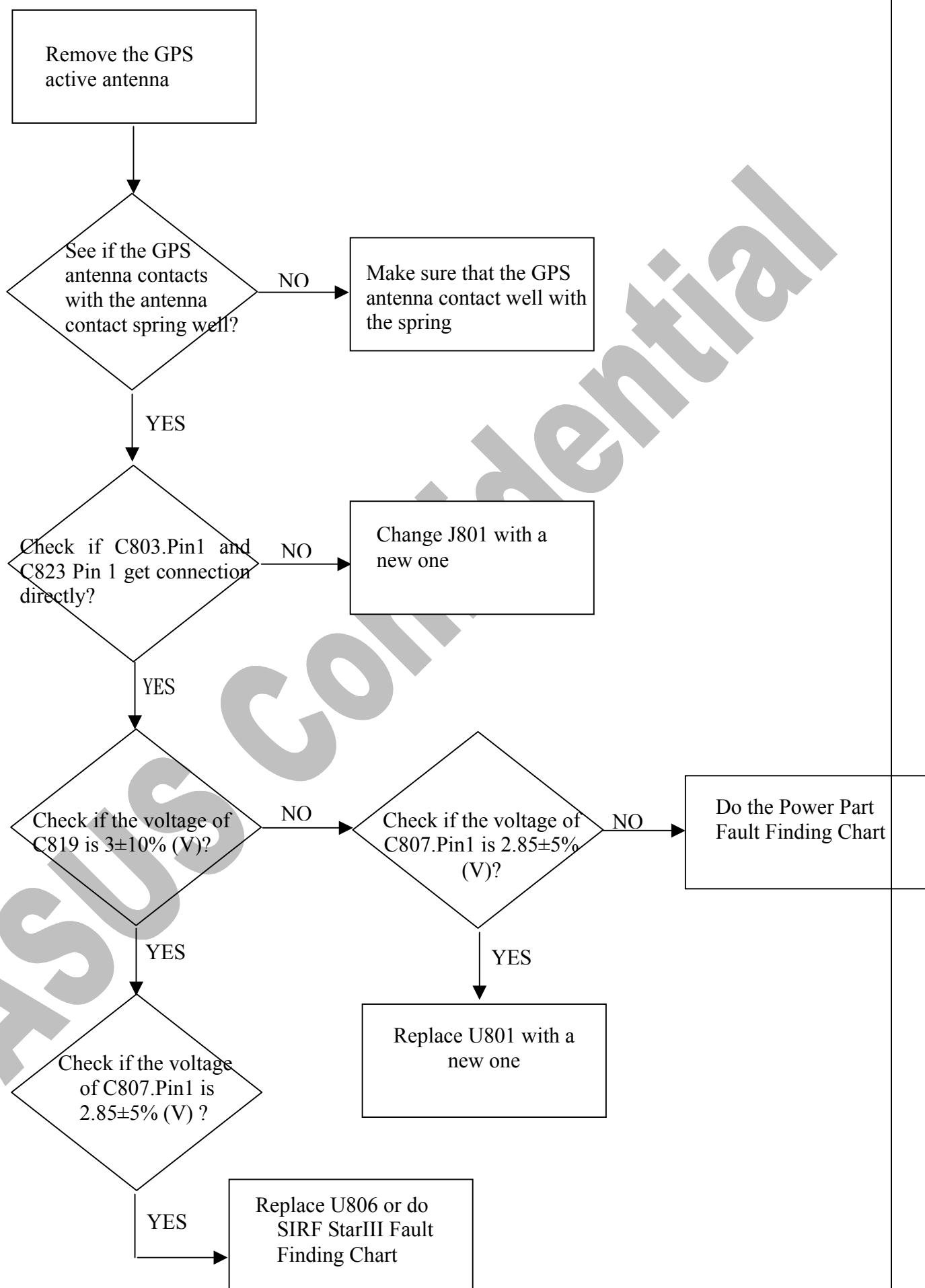
1. Start the SiRFDemoPPC program. Then, make sure that the GPS comport setting is [Port:COM3][Baud Rate:4800]. After this step, check whether the GPS function works or not.

Re-download the GPS firmware (as Appendix B) and then check if the GPS function or works or not.

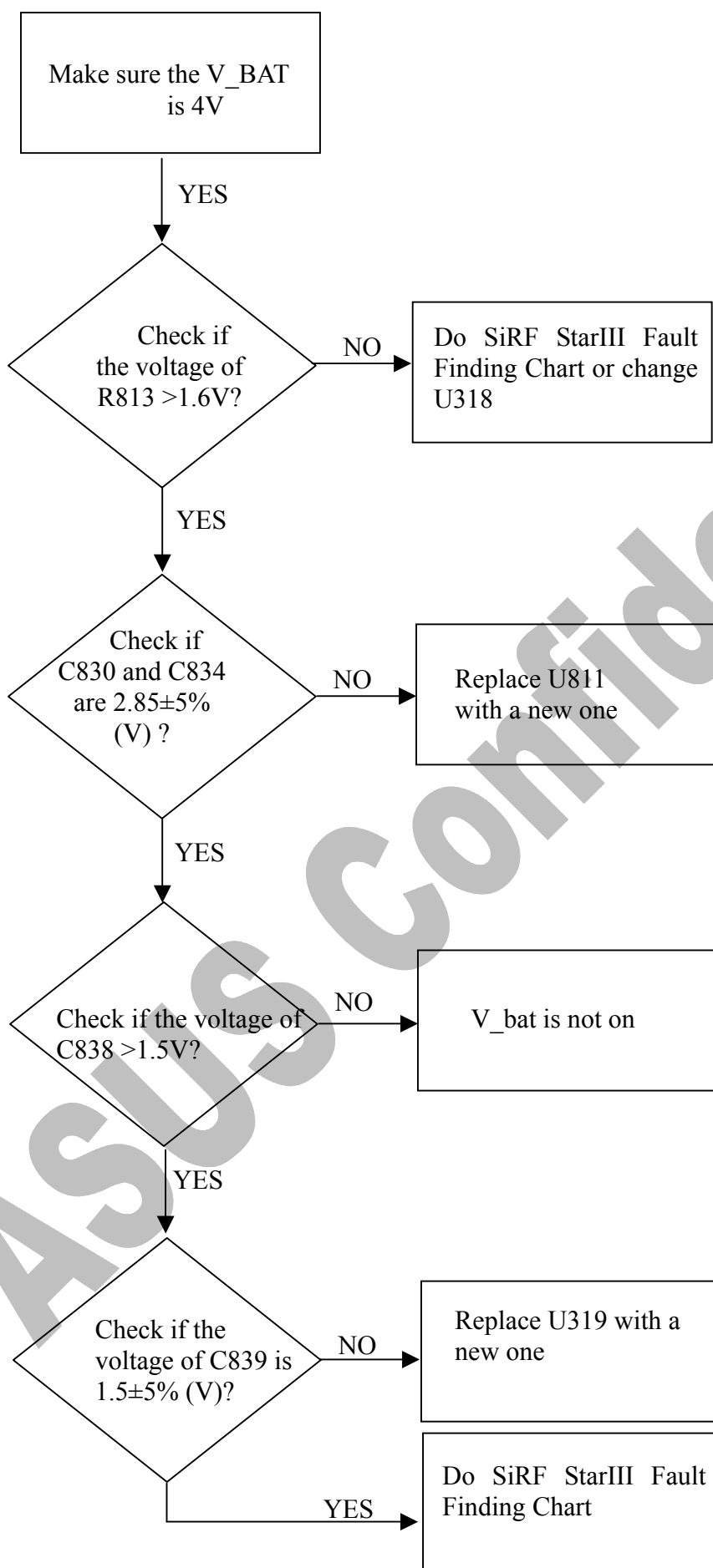
2. Active Path Fault Finding Chart



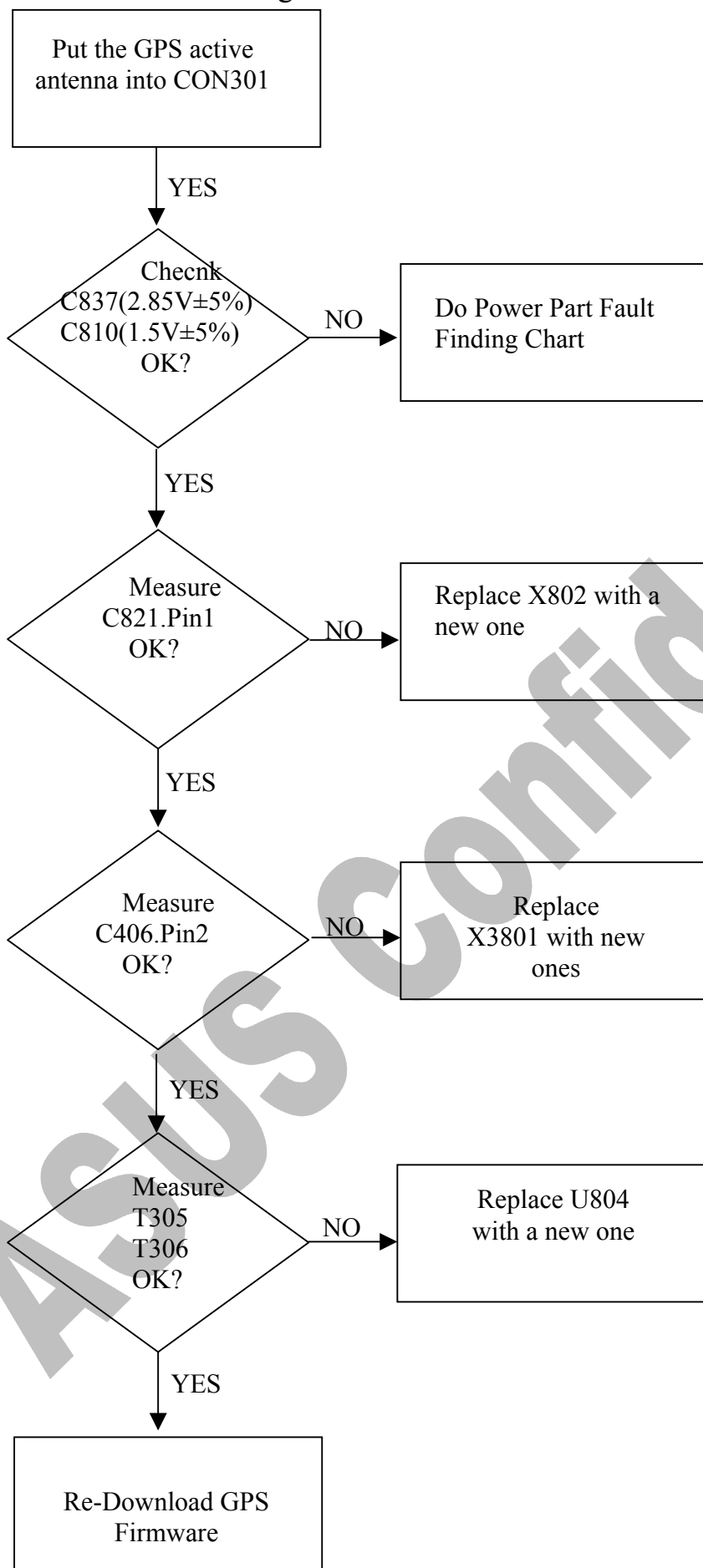
4.Passive Path Fault Finding Chart



5.Power Part Fault Finding Chart

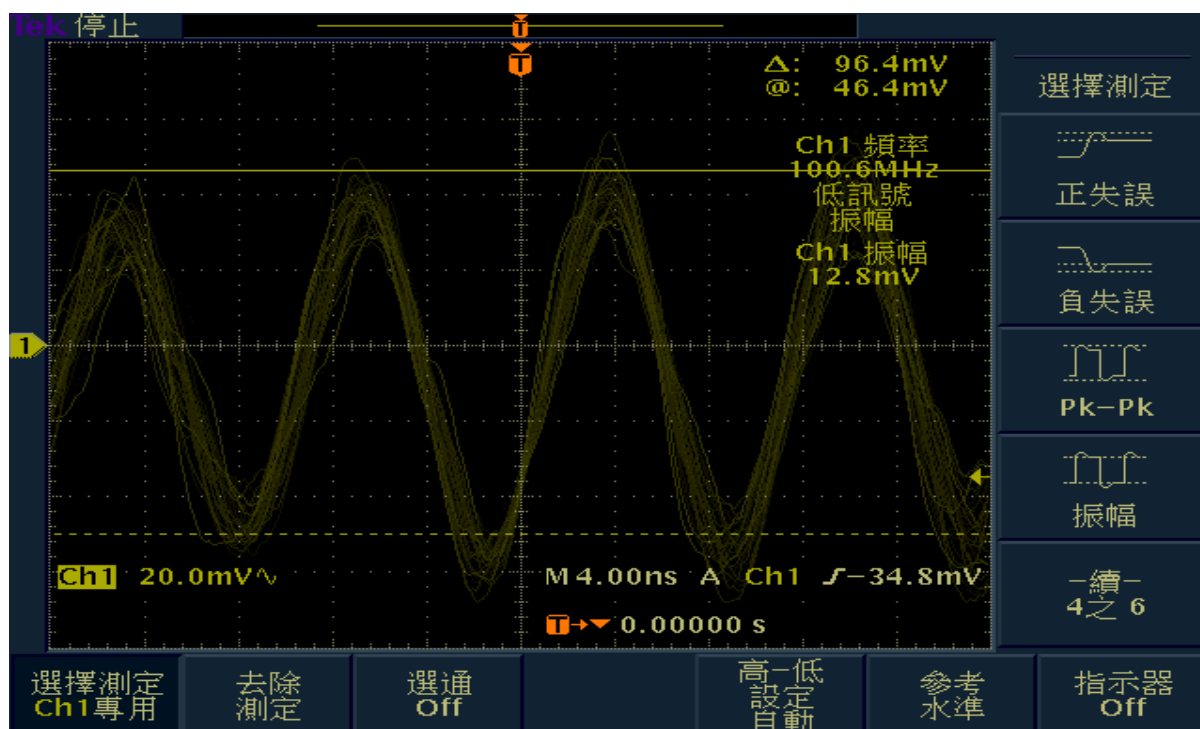


6.SiRF StarIII Fault Finding Chart

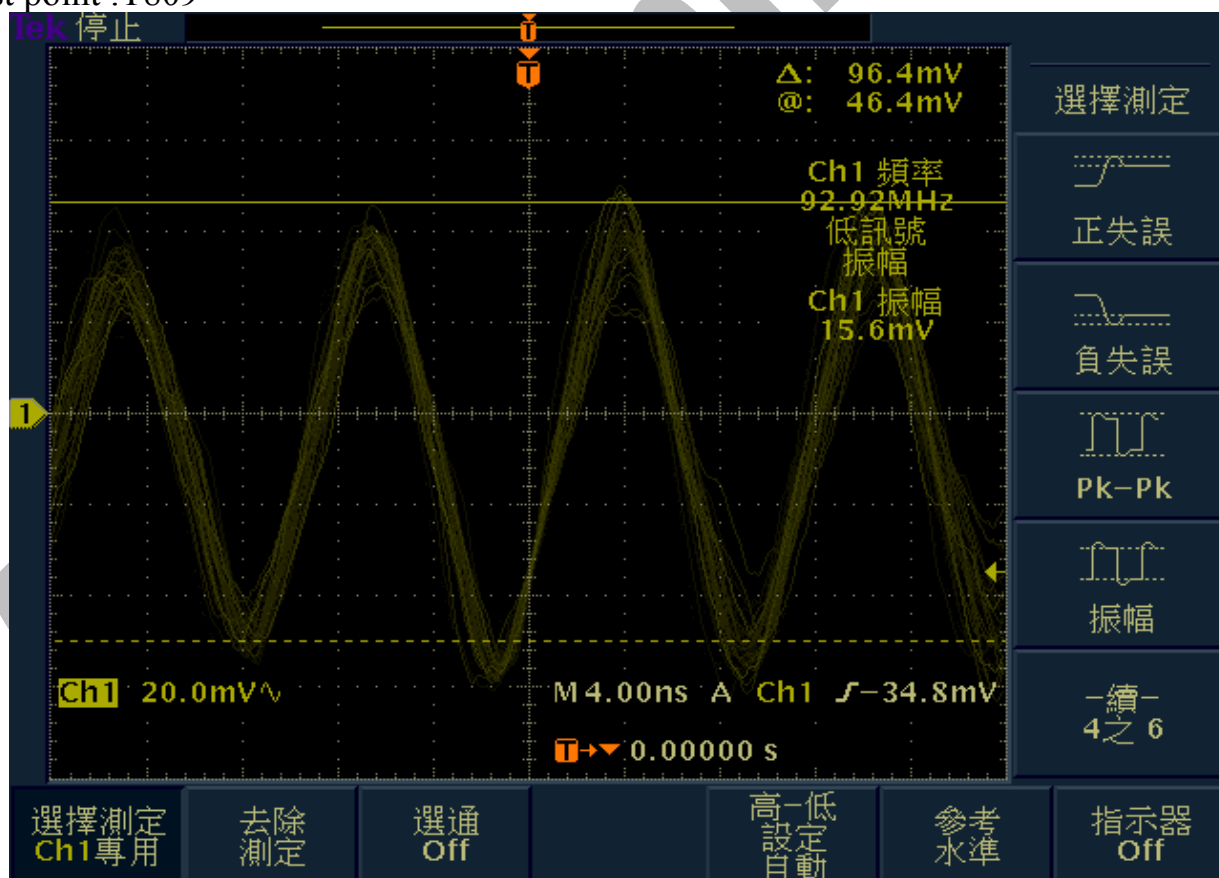


21. Measurement results of all test points

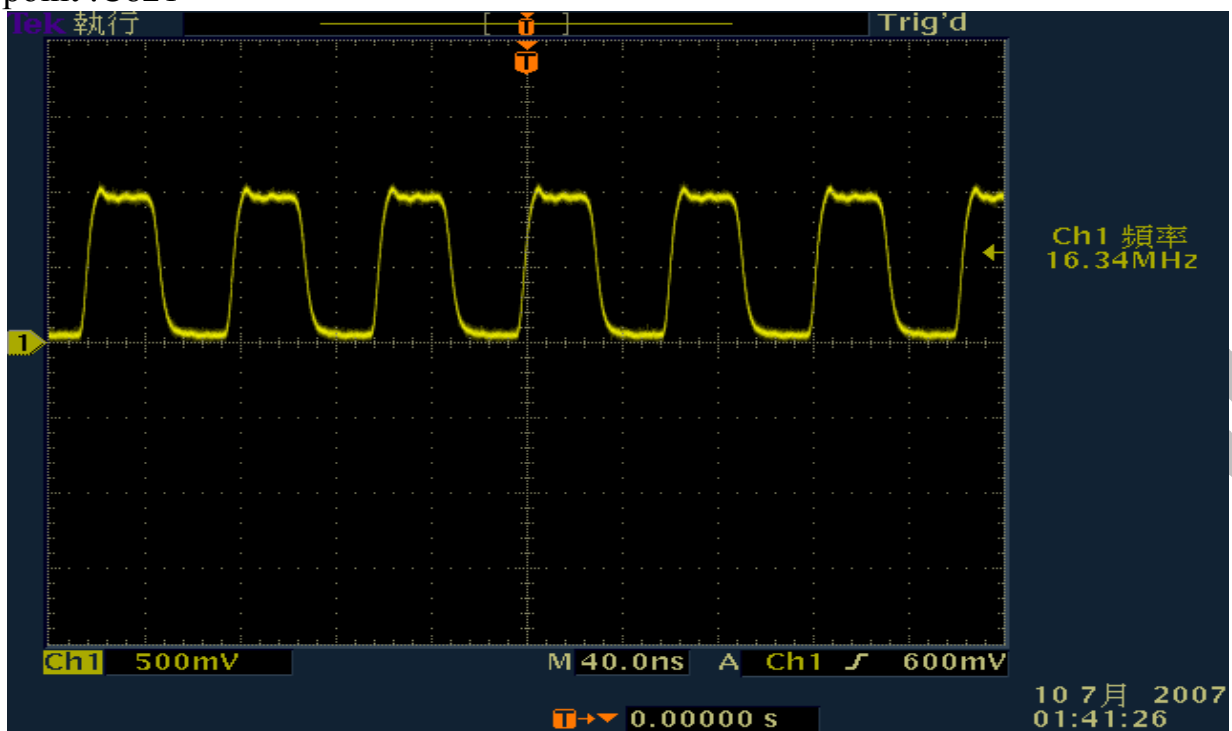
Test point : T808



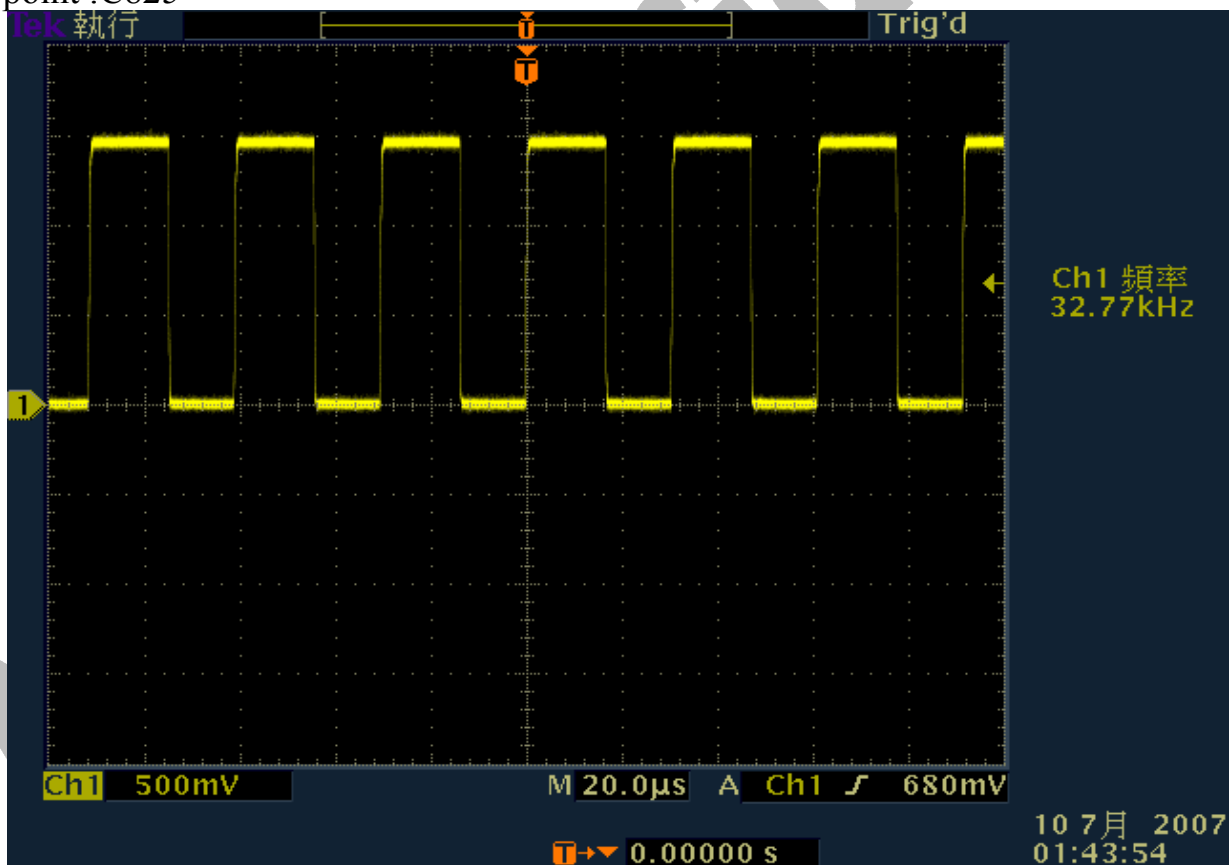
Test point : T809



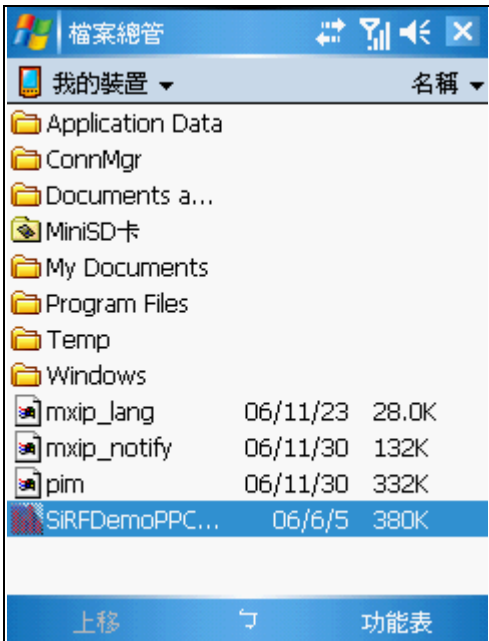
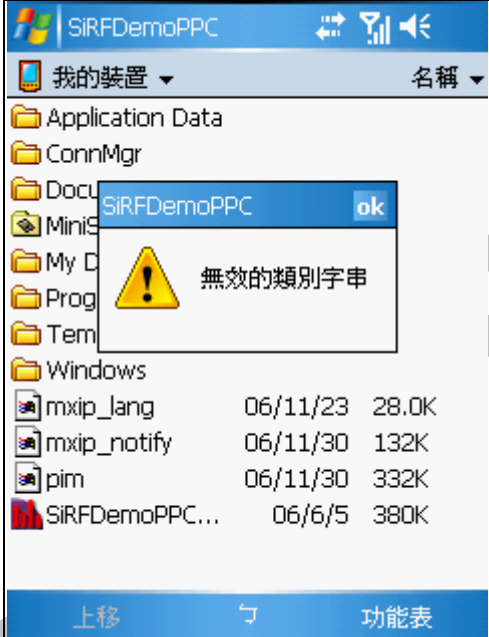
Test point :C821

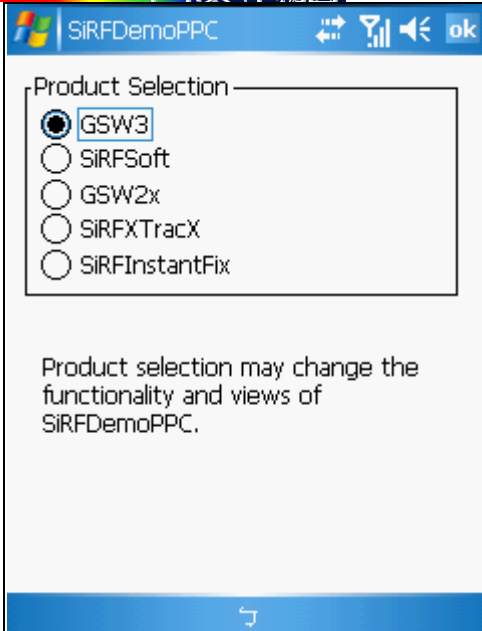


Test point :C825

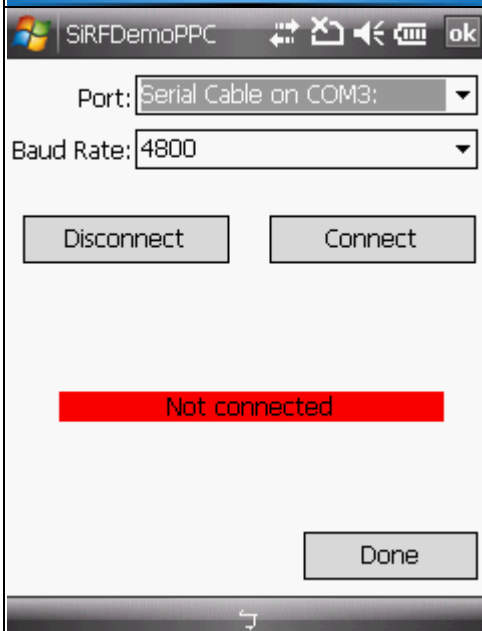


22. Software procedure

	Put SiRFDemoPPC at Micro SD Card
	<ol style="list-style-type: none">1. choose [SiRFDemoPPC]2. choose [OK]

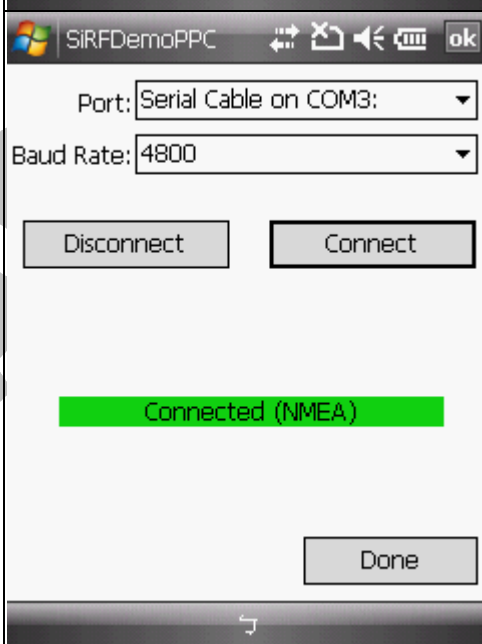


1. choose [OK]



1. choose [Connect]

4800 or 57600



1. choose [Done]

SiRFDemoPPC

Position **Signal** Sky Plot Map Text

Lat:
Lon:

Speed: Heading: Altitude:

Mode: HDOP: Fix: No Fix

Satellites Used in Fix:

Properties...

SiRFDemoPPC plantface

SiRFDemoPPC

Position Signal Sky Plot Map Text

Time to First Fix:

Satellite:

Signal Strength (dB-Hz):

Setup Command Poll Help

1. choose [Signal]

SiRFDemoPPC

Position Signal Sky Plot Map Text

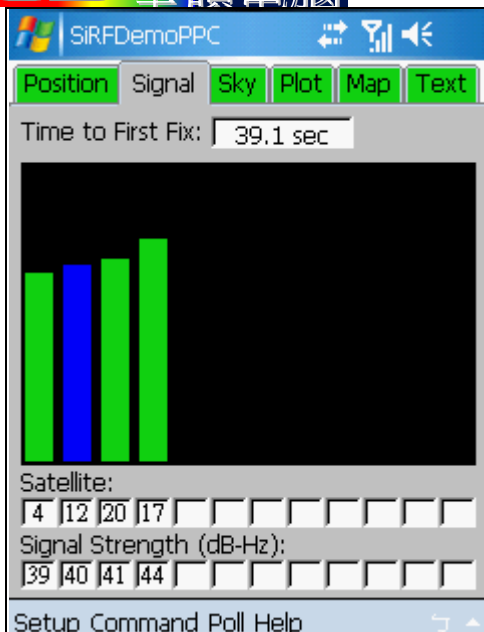
Time to First Fix:

Satellite:

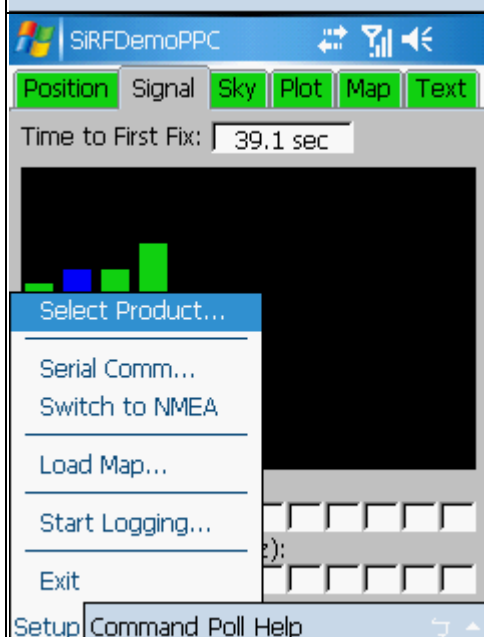
Signal Strength (dB-Hz):

Setup Command Poll Help

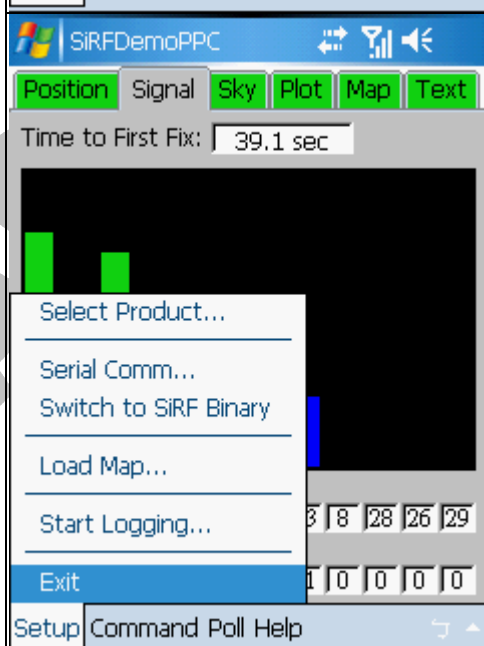
GPS signal receiving



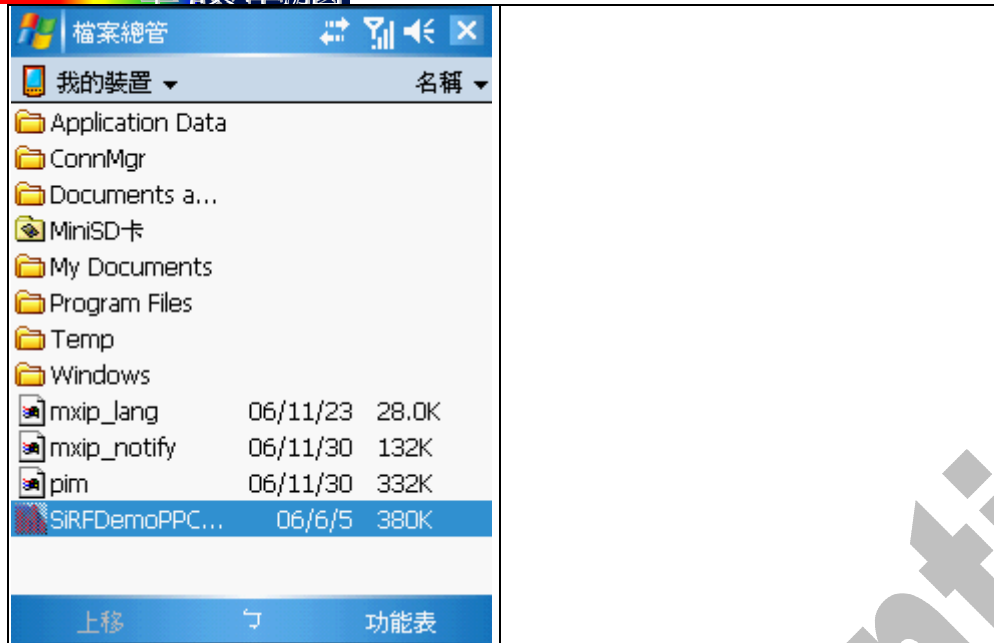
The green signal means the signal has been demodulated.




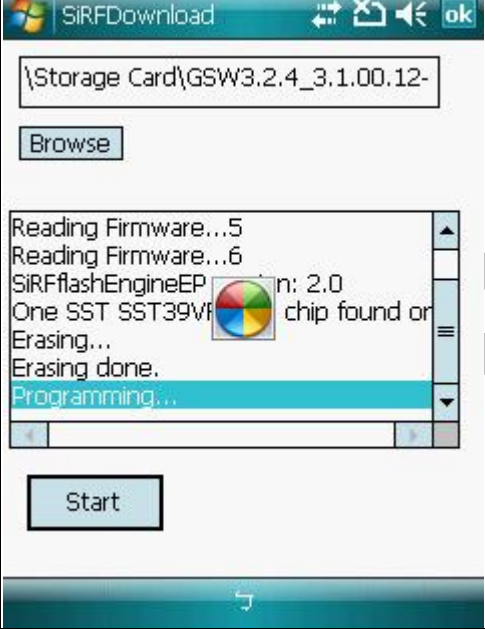
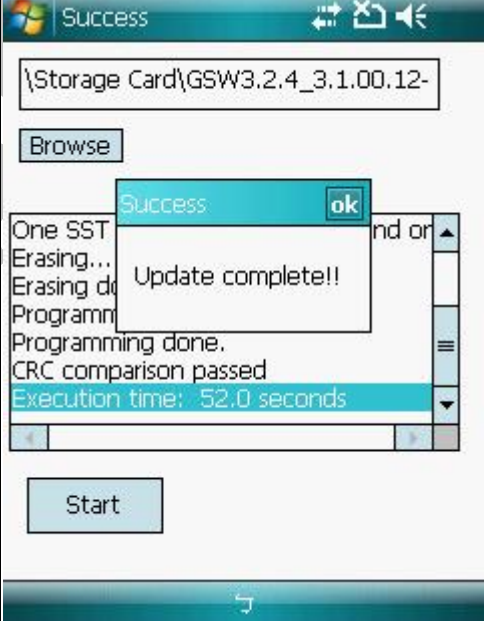
When all tests are finished
1. choose [setup]



1. choose [Exit]



22.1 GPS firmware download

	<p>1.choose [Pegasus_DGPS.exe]</p>
	<p>Re-download automatically begins</p>
	<p>The re-download is finished</p>



Mobile re-boot

ASUS Confidential